Q. 1: Failure is _____
A. Incorrect program behavior due to a fault in the program
B. Bug found before product Release
C. Bug found after product Release
D. Bug found during Design phase

Correct Answer A

Explanation: answer B, C, and D refer to bugs or defect. Answer A is the definition of a failure, incorrect program behavior due to a fault in the program. A failure is the symptom of the defect, not the defect itself.

Q. 2: Which of the following can be the root cause of a bug in a software product?
(I) The project had incomplete procedures for configuration management.
(II) The time schedule to develop a certain component was cut.
(III) the specification was unclear
(IV) Use of the code standard was not followed up
(V) The testers were not certified
A. (I) and (II) are correct
B. (I) through (IV) are correct
C. (III) through (V) are correct
D. (I), (II) and (IV) are correct

Correct Answer B

Explanation: In these types of long questions, try to minimize your choices by removing the obvious wrong answers without reading the whole question.

So we'll read one of the options, decide if it is a root cause or not then check the answers and remove those answers that don't match our choice.

We will continue these steps without the need to read the whole question from start to end.

So in this question "(i) The project had incomplete procedures for configuration management." seems like a good root cause for adding bugs to the software, so (i) is a choice

Looking at the answers, we see all the choices contain the option (i) except C. so we will remove answer C from our choice and continue.

Before reading option (ii) we notice that it exists in the remaining answers that we have now A, B, and D, so there's no need to read it

Option (iii) the specification was unclear, is a valid good root cause for adding bugs to the software. Looking at the answers, we don't see (iii) in either answer A or D. So only B is the remaining answer, so the answer is B

This is a good strategy when the time is limited like the ISTQB foundation exam.

When you have time after solving the entire exam, you can confirm your answer by reading the whole question again

We can see that all the option a valid ROOT cause reason to get someone to make a mistake and add a bug to the software. However, option (V) tester's certification is not a good choice.

Q. 3: Which of the following is NOT a reasonable test objective?
A. To find faults in the software
B. To give confidence in the software
C. To find performance problems
D. To prove that the software has no faults

Correct answer D

Explanation: Notice the NOT here, we're looking for the false test objective.

As there's no way to prove that the software has no faults according to the first principle of testing, then the correct answer is D.

Notice that, "To find performance problems" is not literally indicated in the syllabus as a test objective but it could be understood that it falls under "To Identify Defects."

Q. 4: Which of the following is true
A. Testing is the same as quality assurance
B. Testing is a part of quality assurance
C. Testing is not a part of quality assurance
D. Testing is the same as debugging

Correct Answer B

Explanation: Testing is part of quality assurance. One of the methodologies of ensuring the quality of the software is to test it.

Q. 5: Which of the following sentences describes one of these basic principles?
A. Complete testing of software is attainable if you have enough resources and test tools
B. With automated testing, you can make statements with more confidence about the quality of a product than with manual testing
C. For a software system, it is not possible, under normal conditions, to test all input and output combinations.
D. A goal of testing is to show that the software is defect-free.

Correct answer C

Explanation: Answer A is not correct because none of the software principles has anything to do with resources and tools. Answer B, the same thing, none of the software principles has anything to do with automation. Answer D, is against the first principle, "testing shows the presence of defects'.

Answer C is correct, as it's the explanation of the second principle, "Exhaustive testing is impossible."

Q. 6: A test team consistently finds between 90% and 95% of the defects present in the system under test. While the test manager understands that this is a good defect-detection percentage for her test team and industry, senior management and executives remain disappointed in the test group, saying that the test team misses too many bugs. Given that the users are generally happy with the system and that the failures which have occurred have generally been low impact, which of the following testing principles is most likely to help the test manager explain to these managers and executives why some defects are likely to be missed?

A. Exhaustive testing is impossible
B. Absence-of-errors fallacy
C. Defect clustering
D. Pesticide paradox

Correct Answer A

Explanation: for such long questions, make it a habit to start by reading the last part of the question first. Sometimes, the question lays there without the need to read the whole question. If you didn't get the question directly from the last part, then at least you know what you're looking for when you're reading the whole question.

In this question, the last part "**which of the following testing principles …**" tells us everything we need to know without the need to read the whole question. So without looking at the choices yet, which principle could explain why some defects are likely to be missed?

Exhaustive testing would be the answer. Because there's no way, we test using all the possible inputs and preconditions. We only select some inputs and some preconditions. So there's a chance we might miss one input or one precondition.

Q. 7: Which activity in the fundamental test process includes evaluation of the testability of the requirements and system?

A. Test design.
B. Test implementation.
C. Test analysis.
D. Test control.

Correct answer C

Explanation: evaluation of the testability of the requirements and system is related to the Test analysis group of activities.

Q. 8: Consider the following list of test process activities:
I. Analysis
II. Test completion
III. Execution
IV. Planning
V. Implementation
Which of the following places these in their logical sequence?
A. IV, I, V, II, and III.
B. IV, I, V, III, and II.
C. I, II, III, IV, and V.
D. I, IV, V, III, and II.

Correct Answer B

Explanation: This is a straightforward question about the order of test activities in the test process.

Again, when you solve such style of questions, follow the same strategy as before.

You know you should start by **"IV. Planning"** so any answer that doesn't start with IV should be removed, so you'll end up with choice A and B … and continue the process...

Also, notice that the Test process contains 7 test group activities, and this question lists only 5. The questions didn't mention Test Design nor Test Monitoring and Control. That's OK, the question only asks for the order of the mentioned activities.

Q. 9: Which of the following is most important to promote and maintain good relationships between testers and developers?
A. Understanding what managers value about testing.
B. Promoting better quality software whenever possible.
C. Explaining test results in a neutral fashion.
D. Identifying potential customer workarounds for bugs.

Correct answer C

Explanation: This question asks about the MOST important answer. Which means that there could be an important answer but less important.

All the answers look good actually, but which one is directly related to "promote and maintain good relationships between testers and developers." Answer C would be correct.

The remaining answers are OK but not related to the relationships between testers and developers.

Q. 10: Match the following work products with their corresponding Test process group
(i) Test summary reports
(ii) Change requests
(iii) Test suites
(iv) Defect reports

(w) Test execution
(x) Test implementation
(y) Test monitoring and control
(z) Test completion

A. i-z, ii-z , iii-w, iv-w
B. i-x, ii-w, iii-z, iv-y
C. i-y, ii-z, iii-x, iv-w
D. i-w, ii-x , iii-y, iv-z
Correct answer C

Explanation: This should be a straightforward question.

Test summary reports are created during both Test Monitoring and Control and Test Completion.

Change Requests are created during Test Completion.

Test Suites are created Test Implementation

Defect reports are created during Test execution.

Q. 1: Which test levels are USUALLY included in the common type of V-model?
A. Incremental testing, exhaustive testing, exploratory testing, and data driven testing
B. Integration testing, system testing, acceptance testing, and regression testing
C. Alpha testing, beta testing, black-box testing, and white-box testing
D. Component testing, integration testing, system testing, and acceptance testing

Correct answer D

Explanation: straightforward answer

Q. 2: Which of the following statements is true about a software verification and validation program?
I. It strives to ensure that quality is built into software.
II. It provides management with insights into the state of a software project.
III. It ensures that alpha, beta, and system tests are performed.
IV. It is executed in parallel with software development activities.
A. I, II & III
B. II, III & IV
C. I, II & IV
D. I, III & IV

Correct answer C

Explanation: option (I) is correct, so we will remove answer B because it doesn't contain (I)

Option (II) is correct, so we will remove answer D because it doesn't contain (II)

Option (III) is incorrect, so we will remove answer A because it contain (III)

To confirm, Option (IV) is correct and it's in Answer C

Q. 3: Which option best describes objectives for test levels with a life cycle model?
A. Objectives should be generic for any test level.
B. Objectives are the same for each test level.
C. The objectives of a test level don't need to be defined in advance.
D. Each level has objectives specific to that level.

Correct answer D

Explanation: answers A and B are incorrect as every test level has its own special objectives. Answer c is incorrect, as we need to know the objective of testing to make sure that we achieve the objective by the testing activity.

Q. 4: Integration testing has following characteristics
I. It can be done in incremental manner
II. It is always done after system testing
III. It includes functional tests
IV. It includes non-functional tests

A. I, II and III are correct
B. I is correct
C. I, III and IV are correct
D. I and III are correct

Correct answer C

Explanation: Option (I) is correct and it's already in every answer. Option (II) is incorrect because integration testing can happen after component testing and/or after system testing (system integration testing). So we will remove answers A because it contains option (II).

Option (III) is correct because functional testing can be done at all testing levels. So we will remove answers B because it doesn't contains option (III). So we are left with answer C and D.

Option (IV) is correct because non-functional testing can be done at all testing levels. Therefore, we will remove answers D because it doesn't contains option (IV). So the correct answer is C.

Q. 5: _____is a very early build intended for limited distribution to a few key customers and to marketing for demonstration purposes.
A. Alpha release
B. Beta release
C. Test release document
D. Build

Correct answer B

Explanation: We are "distributing" the build to the customers so they'll test it on their sites then it is Beta Testing.

Q. 6: To test a function, the programmer has to write a _____, which calls the function to be tested and passes it test data.
A. Stub
B. Driver
C. Proxy
D. None of the above

Correct answer B

Explanation: We are writing code to call the function under test, so the written code is the "caller" so it's a driver.

Q. 7: A number of critical bugs are fixed in software. All the bugs are in one module, related to reports. The test manager decides to do regression testing only on the reports module.
A. The test manager should do only automated regression testing.
B. The test manager is justified in her decision because no bug has been fixed in other modules
C. The test manager should only do confirmation testing. There is no need to do regression testing
D. Regression testing should be done on other modules as well because fixing one module may affect other modules

Correct answer D

Explanation: answer D is correct. After any change in a module or change, we need to do confirmation testing or re-testing on that module and regression testing to other modules to make sure no defects have been unintentionally introduced to the software.

Answer A is not related to the topic of the question. Answer B and C are not justified.

Q. 8: Which of these statements about functional testing is true?
A. Structural testing is more important than functional testing as it addresses the code.
B. Functional testing is useful throughout the life cycle and can be applied by business analysts, testers, developers and users.
C. Functional testing is more powerful than static testing as you actually run the system and see what happens.
D. Inspection is a form of functional testing.

Correct answer B

Explanation: Answer A and C are incorrect as there is all types of testing are needed and are complementary to each other.

Answer D is incorrect as inspection is a review type

Q. 9: Regression testing should be performed:

v) Every week
w) After the software has changed
x) As often as possible
y) When the environment has changed
z) When the project manager says

A. v & w are true, x – z are false
B. w, x & y are true, v & z are false
C. w & y are true, v, x & z are false
D. w is true, v, x y and z are false

Correct answer C

Explanation: We know for sure that regression testing should be done whenever there's a change. So options w and y are correct. Therefore, the answer is C.

To confirm, we don't need to do regression testing every week nor as as often as possible nor when the project manager says.

Q. 10: The _____ testing should include operational tests of the new environment as well as of the changed software

A. System Testing
B. Integration testing
C. Component testing
D. Maintenance testing

Correct answer D

Explanation: We are talking about a new environment and a changed software. So it is Maintenance testing.

Q. 1: Reviews, static analysis and dynamic testing have the same objective
A. Identifying defects.
B. Fixing defects.
C. Reducing development time
D. identifying defects and Fixing defects.

Correct answer A

Explanation: The objective of all testing activities is to find defects. Fixing defects is the objective of debugging

Q. 2: You were asked to perform a review of the word processing application. It is expected that the software will be used by many different clients, but your team decided to concentrate their analysis on 3 client types:
• A student who usually does a lot of short assignments and reports
• A secretary who is a fast type writer and uses the keyboard most of the time and type
• An old publishing company worker who prints large books and novels
The team will conduct the review of the software from the point of view of these client types. Which review technique will be the most useful in this case?

A. Role-based review
B. Perspective-based review
C. Checklist-based review
D. Scenarios and dry runs

Correct answer A

Explanation: In the role-based reviewing the reviewers evaluate the work product from the perspective of individual stakeholder roles. Typical roles include specific end user types (e.g., experienced, inexperienced, elderly, etc.). This approach is well aligned with the concept of personas—this way the testers will review the interface from the different user types' points of view.

Perspective-based approach is incorrect as it focuses on different stakeholder viewpoints, like end user, marketing, designer, tester, operations, etc. In our question, only end users are considered.

C is incorrect, because in a checklist-based review, the reviewers detect issues based on checklists that are distributed at review invitation. In our scenario, there are no checklists mentioned.

D is incorrect, because with scenario-based reviewing, reviewers are provided with structured guidelines on how to read through the work product. The concept of personas describes the general types.

Q. 3: Which of the following statements regarding static testing is false:
A. Static testing requires the running of tests through the code
B. Static testing should be used before dynamic testing
C. Static testing includes techniques such as reviews and static analysis
D. Static testing can give measurements such as "number of lines of code"

Correct answer A

Explanation: Notice that we are looking for the false answer here. Static testing main feature is that it can find defects without running the code.

Q. 4: What is the most important factor for successful performance of reviews?
A. A separate scribe during the logging meeting
B. Trained participants and review leaders
C. The availability of tools to support the review process
D. A reviewed test plan

Correct answer B

Explanation: We are looking for the most important factor. Answers A, B and C are good factors while answer D is not a factor for successful performance of reviews. Answer B is the most important factor because without it, the review activity will be useless. While a separate scribe during the logging meeting and the availability of tools to support the review process are not of that importance. As the review process can be successful without it.

Q. 5: What is the main difference between a walkthrough and an inspection?
A. An inspection is led by the author, whilst a walkthrough is led by a trained moderator.
B. An inspection has a trained leader, whilst a walkthrough has no leader.
C. Authors are not present during inspections, whilst they are during walkthroughs.
D. A walkthrough is led by the author, whilst an inspection is led by a trained moderator.

Correct answer D

Explanation: Straightforward answer, A walkthrough is led by the author, whilst an inspection is led by a trained moderator.

Q. 6: Find the correct flow of the phases of a formal review
A. Planning, Individual preparation, Initiate Review, Issue communication and analysis, Fixing and Reporting.
B. Planning, Initiate Review, Individual preparation, Fixing and Reporting, Issue communication and analysis.
C. Planning, Initiate Review, Individual preparation, Issue communication and analysis, Fixing and Reporting.
D. Planning, Individual preparation, Initiate Review, Fixing and Reporting, Issue communication and analysis.

Correct answer C

Explanation: the phases or activities of a formal review process are

1. Planning
2. Initiate Review
3. Individual review (Individual preparation)
4. Issue communication and analysis
5. Fixing and Reporting

So the correct order can be found only in answer C

Q. 7: What is NOT included in typical costs for an inspection process?
A. Setting up forms and databases
B. Analyzing metrics and improving processes
C. Writing the documents to be inspected
D. Time spent on the document outside the meeting

Correct answer C

Explanation: This is a tricky question as it tests your understanding of what a review is. Writing the documents to be inspected is not part of the review process. Therefore, we cannot include the cost of writing those documents to the cost of the review process.

Meanwhile, Setting up forms and databases, Analyzing metrics and improving processes and Time spent on the document outside the meeting (individual preparation) are all parts of the review process and their cost should be included in the total cost of the review process cost.

Q. 8: Which expression best matches the following characteristics or review processes:
1. Led by author
2. Undocumented
3. No management participation
4. Led by a trained moderator or leader
5. Uses entry exit criteria

s) Inspection
t) Peer review
u) Informal review
v) Walkthrough
A. s = 4, t = 3, u = 2 and 5, v = 1
B. s = 4 and 5, t = 3, u = 2, v = 1
C. s = 1 and 5, t = 3, u = 2, v = 4
D. s = 5, t = 4, u = 3, v = 1 and 2

Correct answer B

Explanation: To solve this question easily notice the type of matching we need to do and pick the most condiment match and start from there.

In this case, I would say led by the author goes only with walkthrough, so "1 = v". So possible correct answers would be A, B or C.

Looking at A, B and C, we notice that "u Informal review" can help us solve the question more quickly. So we look at the match for "u" and the match would be "2. Undocumented", so "u = 2". Therefore, the answer would either A or B

Looking at A and B, we notice that "5 uses entry exit criteria" can help us solve the question. We know that Inspection uses entry exit criteria. So, "s = 5", which can only be found in answer B.

Q. 9: Which of the following is a purpose of the review-planning phase?
A. Log defects.
B. Explain the documents to the participants.
C. Gather metrics.
D. Allocate the individual roles.

Correct answer D

Explanation: "Log defects" is in the issue communication and analysis phase. "Explain the documents to the participants" is in the Initiate review phase. "Gather metrics" is in the Fixing and reporting phase. "Allocate the individual roles" is in the planning phase.

Q. 10: A Person who documents all the issues, problems and open points that were identified during a formal review.
A. Moderator.
B. Scribe
C. Author
D. Manager

Correct answer B

Explanation: Scribe is the **Person who documents all the issues during a formal review.**

Q. 1: Which of the following is the benefit of using the checklist-based testing?

A. It allows us to appreciate the nonfunctional testing, which is often forgotten.
B. It allows us to test effectively in absence of formal requirements.
C. It allows us to take advantage of the tester's expert knowledge.
D. It allows us to test in a more consistent way.

Correct answer D

Checklist-based testing makes testing more consistent, as—when we repeat the tests—it enforces us to perform the actions that check the same things.
A is incorrect, because although checklists may be organized around the nonfunctional testing issues, but this is not a general benefit of using checklists.
B is incorrect, because checklists have nothing to do with the absence of formal requirements. This is more a feature of exploratory testing.
C is incorrect, because using the checklists does not necessarily require the expert knowledge of a tester.

Q. 2: Which statement about expected outcomes is FALSE?

A. Expected outcomes are defined by the software's behavior.
B. Expected outcomes are derived from a specification, not from the code
C. Expected outcomes should be predicted before a test is run
D. Expected outcomes may include timing constraints such as response times

Correct answer A

Explanation: Expected outcome of the software is either defined from the specification document before the test is run and might include timing constraints (non-functional requirement).The software's behavior defines the actual outcome not the expected outcome.

Q. 3: Purchase discount is 0% for up to 500$, 5% is added for each additional 500$ up to 2000$, and 25% is applied for above 2000 EGP. Which test inputs in EGP would be selected for equivalence partitions?

A. -250, 700, 1400, 1800, 4000
B. 250, 1000, 3000
C. -100, 250, 650, 1300, 1700, 2900
D. 200, 720, 1600, 1800, 2100

Correct answer C

Explanation: This example is similar to the one we mentioned in the equivalence-portioning lecture. The main difference here – and I hope you have noticed it – is that they are asking about equivalence portioning and didn't specify if they want valid ones or invalid ones. So in this case they are asking about all the equivalence portions valid and invalid ones.

The partition will be the same as the example in the lecture

Negative infinity -> -1

Zero -> 500

501 - >1000

1001 - > 1500

1501 -> 2000

2000 - > infinity

Looking at the options for answer, we see that choice C is the only one that can fulfill all the specified partitions.

Q. 4: Bank fee is 0% for balance less than 500$, 2% for less than 1000$, and 4% for 1000$ or more. Which test inputs in dollars would be selected using BVA?
A. 0.00, 0.01, 499.99, 500.00, 500.01, 999.99, 1000.00, 1000.01
B. -0.01, 0.00, 499.99, 500.00, 999.99, 1000.00
C. -0.01, 499.99, 500.00, 999.99, 1000.00
D. 0.00, 500.00, 500.01, 1000.00, 1000.01

Correct answer B

Explanation: This question is also similar to the one we mentioned in the lecture but again they are here asking for all boundaries both valid and invalid.

The boundaries of the partitions are

Negative infinity -> -0.01

Zero -> 499.99

500 -> 999.99

1000 -. Infinity

Our solution should include all those numbers we defined as boundaries, and they all exist in answer B.

Answers A and D do not contain negative boundaries. Answer C misses Zero as a boundary.

Q. 5: Which of the following could be used to assess the coverage achieved for black-box test techniques?
V. Decision outcomes exercised
W. Partitions exercised
X. Boundaries exercised
Y. State transitions exercised
Z. Statements exercised
A. Y, W, Y, or Z
B. W, X or Y
C. V, X or Z
D. W, X, Y or Z

Correct answer B

Explanation: this question is more about distinguishing between black box testing and white box testing techniques. Partitions, Boundaries and State transitions are black box techniques. So the answer should contain W, X and Y which is answer B
Decision outcomes and Statements are white box techniques.

Q. 6: Consider the following decision table for Car rental.

Conditions	Rule 1	Rule 2	Rule 3	Rule 4
Over 23?	F	T	T	T
Clean driving record?	Don't care	F	T	T
On business?	Don't care	Don't care	F	T
Actions				
Supply rental car?	F	F	T	T
Premium charge	F	F	F	T

Given this decision table, what is the expected result for the following test cases?

TC1: A 26-year-old on business but with violations or accidents on his driving record

TC2: A 62-year-old tourist with a clean driving record

A. TC1: Don't supply car; TC2: Supply car with premium charge.
B. TC1: Don't supply car; TC2: Supply car with no premium charge.
C. TC1: Supply car with premium charge; TC2: Supply car with no premium charge.
D. TC1: Supply car with premium charge; TC2: Don't supply car.

Correct answer B

Explanation: in this question, they are providing us with the decision table and a couple of test cases. The want us to predict the expected outcome/action for each test case.

So we should try to map each test case to its corresponding rule or decision table column and from that column, we should get the answer based on the action of that column.

First test case 'A 26-year-old on business but with violations or accidents on his driving record"

So is he over 23? Yes. Then we are in either rule 2, 3 or 4.

On business? Yes. Then we should exclude rule 3. So we are left with rule 2 and 4.

Clean driving? No, because he has violations or accidents on his driving record so we should exclude rule 4 so we are left with rule 2.

The action in rule 2 is “Supply rental car = False” so we shouldn’t Supply a car. And we can find that in answer A and B.

Second test case “: A 62-year-old tourist with a clean driving record”

So is he over 23? Yes. Then we are in either rule 2, 3 or 4.

On business? No, because he is a tourist. Then we should exclude rule 4. Therefore, we are left with rule 2 and 3.

Clean driving? Yes. So we should exclude rule 2 so we are left with rule 3.

The action in rule 3 is “Supply car = True” and “premium charge = False” so supply a car with no premium charge which can be found in answer B.

Q. 7: Assume postal rates for 'light letters' are:
$0.25 up to 10 grams;
$0.35 up to 50 grams;
$0.45 up to 75 grams;
$0.55 up to 100 grams.
Which test inputs (in grams) would be selected using boundary value analysis?

A. 0, 9,19, 49, 50, 74, 75, 99,100
B. 10, 50, 75,100, 250, 1000
C. 0, 1,10,11, 50, 51, 75, 76,100,101
D. 25, 26, 35, 36, 45, 46, 55, 56

Correct answer C

Explanation: the partitions here are related to the test input which is the the weight of letter in grams. So don’t get confused with the price of the postal rate.

We also notice that there are no negative values in the answer so we will ignore the negative partition. So the partitions are

1 -> 10 grams (We started from 1 because you can’t have a letter which weights Zero)

11 grams -. 50 grams

51 grams -> 75 grams

76 grams -> 100 grams

101 grams -> infinity

Looking at the answers, I would instantly exclude answers B and D as they don’t contain the “1” boundary.

I would also exclude answer A as it doesn’t contain “10”. Therefore, the answer should be C.

Q. 8: Postal rates for 'light letters' are 25p up to 10g, 35p up to 50g plus an extra 10p for each additional 25g up to 100g. Which test inputs (in grams) would be selected using equivalence partitioning?
A. 8, 42, 82, 102
B. 4, 15, 65, 92, 159
C. 10, 50, 75, 100
D. 5, 20, 40, 60, 80

Correct answer B

Explanation: We also notice that there are no negative values in the answer so we will ignore the negative partition. The partitions are

1g -> 10g

11g -> 50g

51g -> 75g

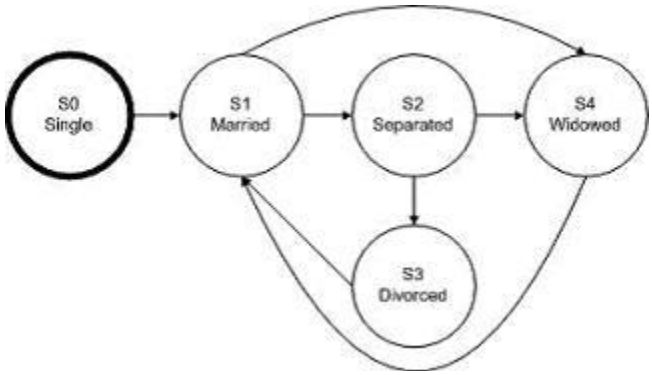
76g -> 100g

101g -> infinity

Only answer B contains values within each partition.

Notice that answer c would be acceptable if they ask for valid values only.

Q. 9: Which test suite will check for an invalid transition using the diagram below?



A. S0-S1-S2-S3-S1-S4
B. S0-S1-S4-S1-S2-S3
C. S0-S1-S3-S1-S2-S1
D. S0-S1-S2-S3-S1-S2

Correct answer C

Explanation: following the arrows, Answer C is invalid, as we can't move from state S1 to state S3.

Q. 10: Which of the following is MOST characteristic of black-box techniques?

A. Test cases can be easily automated.
B. Test cases are independent of each other.
C. Test cases are derived systematically from models of the system.
D. Test cases are derived systematically from the delivered code.

Correct answer C

Explanation: answer D is a characteristic of white box testing. Answers A and B can be applied to black box testing techniques but they're NOT the main features of black box testing.

Answer C is the actually the MOST characteristic of black-box techniques.

Q. 11: Which of the following types of defects is use case testing MOST LIKELY to discover?

i) Defects in the process flows during real-world use of the system.
ii) Defects in the interface parameters in integration testing.
iii) Integration defects caused by the interaction and interference of different components.
iv) Defects in the system as it transitions between one state and another.

A. ii, iii.
B. i, iii.
C. iii, iv.
D. i, ii

Correct answer B

Explanation:

Use case testing can find defects in the process flows during real-world use of the system and it can find Integration defects caused by the interaction and interference of different components. Nevertheless, it cannot find defects in the interface parameters in integration testing nor Defects in the system as it transitions between one state and another.

Q. 12: A methodical approach that uses a list of possible mistakes, defects, and failures, and designs tests that will expose those failures, called "fault attack," is:

A. A form of exploratory testing
B. A structured approach to the error guessing technique
C. A form of checklist-based testing technique
D. A structured approach to the walkthrough

Correct answer B
Fault attack is a structured approach to error guessing technique (per syllabus). In a fault attack, a tester generates a list of possible defects and designs tests to "attack" these defects, that is, to enforce a failure caused by them. Hence, B is correct

Q. 13: What is the expected result for each of the following test cases?

	Rule1	Rule2	Rule3	Rule4
Conditions				
Citibank Card Member	Yes	Yes	No	No
Type of Room	Silver	Platinum	Silver	Platinum
Actions				
Offer upgrade To Gold Luxury	Yes	No	No	No
Offer upgrade to Silver	N/A	Yes	N/A	No

A. Citibank card member, holding a Silver room

B. Non Citibank-member, holding a Platinum room

A. A – Don't offer any upgrade, B – Don't offer any upgrade.
B. A – Don't offer any upgrade, B – Offer upgrade to Gold.
C. A – Offer upgrade to Silver, B – Offer upgrade to Silver.
D. A – Offer upgrade to Gold, B – Don't offer any upgrade.

Correct answer D

Explanation: following the table

Test case A: Citibank card member then we have rules 1 and 2, holding a Silver room then it's only rule 1. The action should be offer upgrade to gold which can only be found is Answer D

No need to continue with Test case B unless we want to confirm our answer. Test case b follow rule 4.

Q. 14: What does it mean if a set of tests has achieved 90% statement coverage?

A. 9 out of 10 decision outcomes have been exercised by this set of tests.
B. 9 out of 10 statements have been exercised by this set of tests.
C. 9 out of 10 tests have been run on this set of software.
D. 9 out of 10 requirements statements about the software are correct.

Correct answer B

Explanation: 9 out of 10 statements have been exercised by this set of tests.

Q. 15: In a system designed to work out the tax to be paid: An employee has $4000 of salary tax free. The next $1500 is taxed at 10% The next $28000 is taxed at 22% Any further amount is taxed at 40%. Which of these is a valid Boundary Value Analysis test case?

A. $32001
B. $1500
C. $33501
D. $28000

Correct answer C

Explanation: partitions are

1 -> 4000$ -> Tax free (Can someone have a zero salary?)

4001 -> 5500 - 10% tax

5501 -> 33500 – 22% tax

33501 -> infinity – 40% tax

33501$ is a boundary in the last partition.

Q. 16: What is exploratory testing?

A. A systematic approach to identifying specific equivalent classes of input.
B. The process of anticipating or guessing where defects might occur.
C. Concurrent test design, test execution, test logging and learning.
D. The testing carried out by a chartered engineer.

Correct answer C

Explanation: Answer A is about equivalence partitioning test design technique. Answer B is about error guessing test design technique. Answer D is about independent testing.

Q. 17: Error guessing is best used

A. As the first approach to deriving test cases
B. After the system has gone live
C. By inexperienced testers
D. After more formal techniques have been applied

Correct answer D

Explanation: Error guessing is a complementary technique to other formal technique to be carried out by experienced testers.

Q. 18: Suppose you have three test cases:

- **Test 1 gives you 20% decision coverage.**
- **Test 2 gives you 30% decision coverage.**
- **Test 3 gives you 30% decision coverage.**

What is the possible decision coverage that can be achieved by a test suite consisted only of these three tests?

A. 82%
B. 50%
C. 25%
D. 1.8%

Correct answer B

If one of the tests already achieved 30% coverage then the smallest possible decision coverage achieved by the test suite {Test 1, Test 2, Test 3} is 30%. This would hold if Test 1 and Test 2 cover exactly the same decision outcomes, and Test 3—the subset of these outcomes.
The largest possible decision coverage is 80%. This would hold if all three tests would cover different set of decision outcomes. So, the possible decision coverage achieved by these three tests is between 30% and 80%. So the only valid answer would be 50%.

Q. 19: Your tests achieved 50% decision coverage. What is a consequence of this fact?

A. Each decision was evaluated with at least one outcome.
B. You achieved at most 50% statement coverage.
C. At least one decision had to be evaluated to FALSE.
D. At least one executable statement was executed.

Correct answer: D

This is a nice tricky question that tests your understanding of statement and decision coverage.
Let's remove the incorrect answers first.

B is incorrect. In the example we used in our lecture, one test case achieved 50% decision coverage, but the same test case achieved 100% statement coverage. So, 50% decision coverage doesn't mean 50% statement coverage.
C is incorrect. Again, in the example we used in our lecture, we achieved 50% decision coverage by visiting all the TRUEs of the decisions in the code and none of the FALSE outcomes.

Option A is the tricky one. The statement "Each decision was evaluated with at least one outcome." Could actually achieve 50% decision coverage but the opposite is not true.
If we achieve 50% decision coverage, it doesn't necessarily means that each decision was evaluated with at least one outcome."
We can use multiple use cases that visit various branches of decisions (TRUE or FALSE) and the total of the outcome s visited is 50% of the total branches in the code. Which means we can visit the TRUE and FALSE of any decision and not VISIT any branch of another decision. So option A is incorrect.

That will leave us with option D "At least one executable statement was executed". 50% decision coverage means that there is at least one decision in a code and that we covered exactly half of the all possible decision outcomes. This means that we had to execute a statement that checks this decision outcome. Hence, D is correct.

Q. 1: You and the project stakeholders develop a list of product risks and project risks during the planning stage of a project. What else should you do with those lists of risks during test planning?
A. Determine the extent of testing required for the product risks and the mitigation and contingency actions required for the project risks.
B. Obtain the resources needed to completely cover each product risk with tests and transfer responsibility for the project risks to the project manager.
C. Execute sufficient tests for the product risks, based on the likelihood and impact of each product risk and execute mitigation actions for all project risks.
D. No further risk management action is required at the test planning stage.

Correct Answer A

Explanation: The main objective of test management is to reduce both the extent of product and project risks. Answer D is for sure incorrect. Answer B is talking about finding the resources to do the testing, which is not a risk management activity. Answer C is confusing but the question is asking about what to do during test planning and 'Executing" tests is not part of the planning. So the correct answer is A.

Q. 2: Which of the following is among the typical tasks of a Test Manager?
A. Develop system requirements, design specifications and usage models.
B. Handle all test automation duties.
C. Keep tests and test coverage hidden from programmers.
D. Gather and report test progress metrics.

Correct answer D

Explanation: "Develop system requirements, design specifications and usage models." is the task of an analyst and architect. "Handle all test automation duties." is the task of the tester. "Keep tests and test coverage hidden from programmers." is not an actual task. "Gather and report test progress metrics." is the task of a Test Manager.

Q. 3: Why is independent testing important?
A. Independent testing is usually cheaper than testing your own work.
B. Independent testing is more effective at finding defects.
C. Independent testers should determine the processes and methodologies used.
D. Independent testers are dispassionate about whether the project succeeds or fails.

Correct Answer B

Explanation: Independent testing is usually more expensive. Independent testers' dispassionate about whether the project succeeds is a drawback of independent testing. And it is not their job to determine processes and methodologies used. However, Independent testing is more effective at finding defects because of their objective assessment.

Q. 4: 'Entry criteria' should address questions such as

I. Are the necessary documentation, design and requirements information available that will allow testers to operate the system and judge correct behavior.
II. Is the test environment-lab, hardware, software and system administration support ready?
III. Statement coverage reached a specific percentage.
IV. Are the supporting utilities, accessories and prerequisites available in forms that testers can use.

A. I, II and IV
B. I, II and III
C. I, II, III and IV
D. II, III and IV.

Correct Answer A

Explanation: All options are valid entry criteria except option (III) which could be an exit criterion.

Q. 5: ISO/IEEE 29119-3 test plan documentation standard could contain all of the following except

A. test execution schedule
B. expected test deliverables
C. test tasks
D. test cases

Correct answer D

Explanation: all options can be found in the IEEE **29119-3** test plan template except "test cases".

Q. 6: For a test procedure that is checking modifications of customers on a database, which two steps below would be the lowest priority if we didn't have time to execute all of the steps? (From the book "Foundations of Software Testing" by Rex Black)

1 Open the database and confirm existing customer
2 Change customer's marital status from single to married
3 Change customer's street name from Parks Road to Park Road
4 Change customer's credit limit from 500 to 750
5 Replace customer's first name with exactly the same first name
6 Close the customer record and close the database

A. Tests 1 and 4
B. Tests 2 and 3
C. Tests 5 and 6
D. Tests 3 and 5

Correct answer D

Explanation: To answer this question, ask yourself "If I have no time, what are the most important test cases to execute that has a high probability that the user might use". Tests 3 and 5 are very rare situations to be done by the user.

Q. 7: Agile testing is a kind of the following strategies

A. Model-based testing approach
B. Methodical testing approach
C. Reactive testing approach
D. Process or standard-compliant testing approach

Correct answer D

Explanation: Agile testing is a kind of Process- or standard-compliant testing approach.

Q. 8: Which of the following is NOT part of configuration management:

A. Status accounting of configuration items
B. Auditing conformance to ISO9001
C. Identification of test versions
D. Record of changes to documentation over time

Correct Answer B

Explanation: Identification of test versions, Record of changes to documentation over time and Status accounting of configuration items are all parts of configuration management.

Q. 9: Which of the following metrics would be most useful to monitor during test execution?

A. Percentage of test cases written.
B. Number of test environments remaining to be configured.
C. Number of defects found and fixed.
D. Percentage of requirements for which a test has been written.

Correct answer C

Explanation: “Percentage of test cases written” and “Percentage of requirements for which a test has been written” would be good in tracking the testing activity during test analysis and design. Number of test environments remaining to be configured could be used during test implementation. “Number of defects found and fixed” is most useful during test execution.

Q. 10: In a defect report, the tester makes the following statement, 'At this point, I expect to receive an error message explaining the rejection of this invalid input and asking me to enter a valid input. Instead the system accepts the input, displays an hourglass for between one and five seconds and finally terminates abnormally, giving the message, "Unexpected data type: 15. Click to continue." '
This statement is likely to be found in which of the following sections of ISO/IEEE 29119-3 standard incident/defect report?
A. Summary
B. Impact
C. Item pass/fail criteria
D. Incident description

Correct answer D

Explanation: The tester is giving a detailed description of the defect, So this statement should be stated in the defect description section of the incident report.

Q. 11: 'Defect Density' calculated in terms of
A. The number of defects identified in a component or system divided by the size of the component or the system
B. The number of defects found by a test phase divided by the number found by that test phase and any other means afterward
C. The number of defects identified in the component or system divided by the number of defects found by a test phase
D. The number of defects found by a test phase divided by the number found by the size of the system

Correct Answer A

Explanation: **Defect Density** = The number of defects identified in a component or system divided by the size of the component or the system

Q. 1: What is a potential risk in using tools to support testing?
A. Unrealistic expectations, expecting the tool to do too much.
B. Insufficient reliance on the tool, i.e. still doing manual testing when a test execution tool has been purchased.
C. The tool may find defects that aren't there.
D. The tool will repeat exactly the same thing it did the previous time.

Correct answer A

Explanation: Option A **Unrealistic expectations, expecting the tool to do too much is a great risk of using a tool. Option B is an acceptable situation to use both manual and automatic testing simultaneously. Option C is not a valid situation.** option D is a benefit of using a tool.

Q. 2: What are the potential benefits from using tools in general to support testing?
A. Greater quality of code, reduction in the number of testers needed, better objectives for testing.
B. Greater repeatability of tests, reduction in repetitive work, objective assessment.
C. Greater responsiveness of users, reduction of tests run, objectives not necessary.
D. Greater quality of code, reduction in paperwork, fewer objections to the tests.

Correct answer B

Explanation: reduction is the number of testers needed, reduction in tests run, objectives not necessary, **reduction in paperwork and fewer objections to the tests** are not valid benefits.

Q. 3: Which of the following is a goal for a proof-of-concept or pilot phase for tool evaluation?
A. Decide which tool to acquire.
B. Decide on the main objectives and requirements for this type of tool.
C. Evaluate the tool vendor including training, support and commercial aspects.
D. Decide on standard ways of using, managing, storing and maintaining the tool and the test assets.

Correct answer D

Explanation: We do a proof of concept or a pilot project after actually purchasing the tool. So options A, B and C are already done steps and cannot be a goal for doing the pilot project.

Q. 4: The place to start if you want a (new) test tool is:
A. Attend a tool exhibition
B. Invite a vendor to give a demo
C. Analyze your needs and requirements
D. Find out what your budget would be for the tool

Correct answer C

Explanation: The most important initial step to purchasing a tool is to analyze the needs and the requirements of the tool.

Q. 5: Which of the following are advanced scripting techniques for test execution tools?
A. Data-driven and keyword-driven
B. Data-driven and capture-driven
C. Capture-driven and keyhole-driven
D. Playback-driven and keyword-driven

Correct answer A

Explanation: capture-driven is the same as playback driven tool. The problem with capture-driven tools is that they will stop working is anything changes in the configuration of the environment since the script is recorded.

Q. 6: Which tools help to support static testing?
A. Static analysis tools and test execution tools.
B. Review process support tools, static analysis tools and coverage measurement tools.
C. Dynamic analysis tools and modeling tools.
D. Review process support tools, static analysis tools and modeling tools.

Correct answer D

Explanation: straightforward question. Review process support tools, static analysis tools and modeling tools are static testing tools.

Q. 7: Find the mismatch
A. Test data preparation tools – Manipulate Data bases
B. Test design tools – Generate test inputs
C. Requirement management tools – Enables individual tests to be traceable
D. Test Execution tools – Check for consistency

Correct answer D

Explanation: we can use each of the tools on the left to achieve the result on the right. Test Execution tools have nothing to do with consistency.

Q. 8: A test harness is a
A. A high level document describing the principles, approach and major objectives of the organization regarding testing
B. A distance set of test activities collected into a manageable phase of a project
C. A test environment comprised of stubs and drives needed to conduct a test
D. A set of several test cases for a component or system under test

Correct answer C

Explanation: A test harness is any code written to help testing the code. Hence, Option C is the only correct answer.

Q. 9: Which of the following are disadvantages of capturing tests by recording the actions of a manual tester?

i The script may be unstable when unexpected events occur.
ii Data for a number of similar tests is automatically stored separately from the script.
iii Expected results must be added to the captured script.
iv The captured script documents the exact inputs entered by the tester.
v When replaying a captured test, the tester may need to debug the script if it doesn't play correctly.

A. i, iii, iv, v.
B. ii, iv and v.
C. i, ii and iv.
D. i and v.

Correct answer A

Explanation: option (ii) is not a valid feature of capturing tests by recording the actions of a manual tester. All the other options are actual disadvantages of such tools.

Q. 10: Which of the following is not part of performance testing:
A. Measuring response time
B. Measuring transaction rates
C. Recovery testing
D. Simulating many users

Correct answer C

Explanation: Recovery testing is a separate kind of testing not related to performance testing.

Questions

Question #1 (1 Point)

Which one of the following answers describes a test condition?

a) An attribute of a component or system specified or implied by requirements documentation.
b) An aspect of the test basis that is relevant to achieve specific test objectives.
c) The degree to which a software product provides functions which meet stated and implied needs when the software is used under specified conditions.
d) The percentage of all single condition outcomes that independently affect a decision outcome that have been exercised by a test case suite.

Select ONE option.

Question #2 (1 Point)

Which of the following statements is a valid objective for testing?

a) The test should start as late as possible so that development had enough time to create a good product.
b) To find as many failures as possible so that defects can be identified and corrected.
c) To prove that all possible defects are identified.
d) To prove that any remaining defects will not cause any failures.

Select ONE option.

Question #3 (1 Point)

Which of the following statements correctly describes the difference between testing and debugging?

a) Testing identifies the source of defects; debugging analyzes the defects and proposes prevention activities.
b) Dynamic testing shows failures caused by defects; debugging finds, analyzes, and removes the causes of failures in the software.
c) Testing removes defects; debugging identifies the causes of failures.
d) Dynamic testing prevents the causes of failures; debugging removes the failures.

Select ONE option.

Question #4 (1 Point)

Which one of the statements below describes a failure discovered during testing or in production?

a) The product crashed when the user selected an option in a dialog box.
b) The wrong version of a compiled source code file was included in the build.
c) The computation algorithm used the wrong input variables.
d) The developer misinterpreted the requirement for the algorithm.

Select ONE option.

Question #5 (1 Point)

Mr. Smith has been testing software applications on mobile devices for a period of 5 years. He has a wealth of experience in testing mobile applications and achieves better results in a shorter time than others. Over a longer period of time Mr. Smith did not modify the existing automated test cases and did not create any new test cases. This leads to fewer and fewer defects being found by executing the tests. What principle of testing did Mr Smith not observe?

a) Testing depends on the environment.
b) Complete testing is not possible.
c) Repeats have no effectiveness.
d) Accumulation of defects.

Select ONE option.

Question #6 (1 Point)

In what way can testing be part of Quality Assurance?

a) It ensures that requirements are detailed enough.
b) It reduces the level of risk to the quality of the system.
c) It ensures that standards in the organization are followed.
d) It measures the quality of software in terms of number of executed test cases.

Select ONE option.

Question #7 (1 Point)

Which of the following activities is part of the main activity "test analysis" in the test process?

a) Identifying any required infrastructure and tools.
b) Creating test suites from test scripts.
c) Analyzing lessons learned for process improvement.
d) Evaluating the test basis for testability.

Select ONE option.

Question #8 (1 Point)

Differentiate the following test work products (1-4) by mapping them to the right description (A-D).

1. Test suite.
2. Test case.
3. Test script.
4. Test charter.

A. A group of test scripts or test execution schedule.
B. A set of instructions for the execution of a test.
C. Contains expected results.
D. An instruction of test goals and possible test ideas on how to test.

a) 1A, 2C, 3B, 4D.
b) 1D, 2B, 3A, 4C.
c) 1A, 2C, 3D, 4B.
d) 1D, 2C, 3B, 4A.

Select ONE option.

Question #9 (1 Point)

How can white-box testing be applied during acceptance testing?

a) To check if large volumes of data can be transferred between integrated systems.
b) To check if all code statements and code decision paths have been executed.
c) To check if all work process flows have been covered.
d) To cover all web page navigations.

Select ONE option.

Question #10 (1 Point)

Which of the following statements comparing component testing and system testing is TRUE?

a) Component testing verifies the functionality of software modules, program objects, and classes that are separately testable, whereas system testing verifies interfaces between components and interactions between different parts of the system.
b) Test cases for component testing are usually derived from component specifications, design specifications, or data models, whereas test cases for system testing are usually derived from requirement specifications or use cases.
c) Component testing only focuses on functional characteristics, whereas system testing focuses on functional and non-functional characteristics.
d) Component testing is the responsibility of the testers, whereas system testing typically is the responsibility of the users of the system.

Select ONE option.

Question #11 (1 Point)

Which one of the following is TRUE?

a) The purpose of regression testing is to check if the correction has been successfully implemented, while the purpose of confirmation testing is to confirm that the correction has no side effects.
b) The purpose of regression testing is to detect unintended side effects, while the purpose of confirmation testing is to check if the system is still working in a new environment.
c) The purpose of regression testing is to detect unintended side effects, while the purpose of confirmation testing is to check if the original defect has been fixed.
d) The purpose of regression testing is to check if the new functionality is working, while the purpose of confirmation testing is to check if the originally defect has been fixed.

Select ONE option.

Question #12 (1 Point)

Which one of the following is the BEST definition of an incremental development model?

a) Defining requirements, designing software and testing are done in a series with added pieces.
b) A phase in the development process should begin when the previous phase is complete.
c) Testing is viewed as a separate phase which takes place after development has been completed.
d) Testing is added to development as an increment.

Select ONE option.

Question #13 (1 Point)

Which of the following should NOT be a trigger for maintenance testing?

a) Decision to test the maintainability of the software.
b) Decision to test the system after migration to a new operating platform.
c) Decision to test if archived data is possible to be retrieved.
d) Decision to test after “hot fixes”.

Select ONE option.

Question #14 (1 Point)

Which of the following options are roles in a formal review?

a) Developer, Moderator, Review leader, Reviewer, Tester.
b) Author, Moderator, Manager, Reviewer, Developer.
c) Author, Manager, Review leader, Reviewer, Designer.
d) Author, Moderator, Review leader, Reviewer, Scribe.

Select ONE option.

Question #15 (1 Point)

Which activities are carried out within the planning of a formal review?

a) Collection of metrics for the evaluation of the effectiveness of the review.
b) Answer any questions the participants may have.
c) Verification of input criteria for the review..
d) Evaluation of the review findings against the exit criteria.

Select ONE option.

Question #16 (1 Point)

Which of the review types below is the BEST option to choose when the review must follow a formal process based on rules and checklists?

a) Informal Review.
b) Technical Review.
c) Inspection.
d) Walkthrough.

Select ONE option.

Question #17 (1 Point)

Which TWO of the following statements about static testing are MOST true?

a) Static testing is a cheap way to detect and remove defects.
b) Static testing makes dynamic testing less challenging.
c) Static testing allows early validation of user requirements.
d) Static testing makes it possible to find run-time problems early in the lifecycle.
e) When testing safety-critical system, static testing has less value because dynamic testing finds the defects better.

Select TWO options.

Question #18 (1 Point)

You will be invited to a review. The result to be reviewed is a description of the in-house document creation process. The aim of the description is to present the work distribution between the different roles involved in the process in a way that can be clearly understood by everyone. You will be invited to a checklist-based review. The checklist will also be sent to you. It includes the following points:

a) Is the person who performs the activity clearly identified for each activity?
b) Is the entry criteria clearly defined for each activity?
c) Is the exit criteria clearly defined for each activity?
d) Are the supporting roles and their scope of work clearly defined for each activity?

In the following we show an excerpt of the work result to be reviewed, for which you should use the checklist above:

"After checking the customer documentation for completeness and correctness, the software architect creates the system specification. Once the software architect has completed the system specification, he invites testers and verifiers to the review. A checklist describes the scope of the review. Each invited reviewer creates review comments - if necessary - and concludes the review with an official review done-comment."

Which of the following statements about your review is correct?

a) Point b) of the checklist has been violated because it is not clear which condition must be fulfilled in order to invite to the review.
b) You notice that in addition to the tester and the verifier, the validator must also be invited. Since this item is not part of your checklist, you do not create a corresponding comment.
c) Point c) of the checklist has been violated as it is not clear what marks the review as completed.
d) Point a) of the checklist has been violated because it is not clear who is providing the checklist for the invitation to the review.

Select ONE option.

Question #19 (1 Point)

What is checklist-based testing?

a) A test technique in which tests are derived based on the tester's knowledge of past faults, or general knowledge of failures.
b) Procedure to derive and/or select test cases based on an analysis of the specification, either functional or non-functional, of a component or system without reference to its internal structure.
c) An experience-based test technique whereby the experienced tester uses a list of items to be noted, checked, or remembered, or a set of rules or criteria against which a product has to be verified.
d) An approach to testing where the testers dynamically design and execute tests based on their knowledge, exploration of the test item and the results of previous tests.

Select ONE option.

Question #20 (1 Point)

Which one of the following options is categorized as a black-box test technique?

a) A technique based on analysis of the architecture.
b) A technique checking that the test object is working according to the technical design.
c) A technique based on the expected use of the software.
d) A technique based on formal requirements.

Select ONE option

Question #21 (1 Point)

The following statement refers to decision coverage:

“When the code contains only a single ‘if’ statement and no loops or CASE statements, and its execution is not nested within the test, any single test case we run will result in 50% decision coverage.”

Which of the following statement is correct?

a) The statement is true. Any single test case provides 100% statement coverage and therefore 50% decision coverage.
b) The statement is true. Any single test case would cause the outcome of the “if” statement to be either true or false.
c) The statement is false. A single test case can only guarantee 25% decision coverage in this case.
d) The statement is false. The statement is too broad. It may be correct or not, depending on the tested software.

Select ONE option.

Question #22 (1 Point)

Which one of the following is the description of statement coverage?

a) It is a metric which is used to calculate and measure the percentage of test cases that have been executed.
b) It is a metric, which is used to calculate and measure the percentage of statements in the source code that have been executed.
c) It is a metric, which is used to calculate and measure the number of statements in the source code that have been executed by test cases that are passed.
d) It is a metric that gives a true/false confirmation if all statements are covered or not.

Select ONE option.

Question #23 (1 Point)

Which statement about the relationship between statement coverage and decision coverage is true?

a) 100% decision coverage also guarantees 100% statement coverage.
b) 100% statement coverage also guarantees 100% decision coverage.
c) 50% decision coverage also guarantees 50% statement coverage.
d) Decision coverage can never reach 100%.

Select ONE option.

Question #24 (1 Point)

For which of the following situations is explorative testing suitable?

a) If due to time pressure requires speeding up the execution of tests already specified.
b) If the system is developed incrementally and no test charter is available.
c) If testers are available who have sufficient knowledge of similar applications and technologies.
d) If an advanced knowledge of the system already exists and evidence is to be provided that it should be tested intensively.

Select ONE option.

Question #25 (1 Point)

An employee's bonus is to be calculated. It cannot be negative, but it can be calculated down to zero. The bonus is based on the length of employment:

- less than or equal to 2 years,
- more than 2 years but less than 5 years,
- 5 to 10 years inclusively or longer than 10 years.

What is the minimum number of test cases required to cover all valid equivalence partitions for calculating the bonus?

a) 3.
b) 5.
c) 2.
d) 4.

Select ONE option.

Question #26 (1 Point)

A speed control and reporting system has the following characteristics:

If you drive 50 km/h or less, nothing will happen.
If you drive faster than 50 km/h, but 55 km/h or less, you will be warned.
If you drive faster than 55 km/h but not more than 60 km/h, you will be fined.
If you drive faster than 60 km/h, your driving license will be suspended.

The speed in km/h is available to the system as an integer value.

Which would be the most likely set of values (km/h) identified by applying the boundary value analysis, where only the boundary values on the boundaries of the equivalence classes are relevant?0, 49, 50, 54, 59, 60.

a) 50, 55, 60.
b) 49, 50, 54, 55, 60, 62.
c) 50, 51, 55, 56, 60, 61.

Select ONE option.

Question #27 (1 Point)

A company's employees are paid bonuses if they work more than a year in the company and achieve a target which is individually agreed before.

These facts can be shown in a decision table:

Test-ID		T1	T2	T3	T4
Condition1	Employment for more than 1 year?	YES	NO	NO	YES
Condition2	Agreed target?	NO	NO	YES	YES
Condition3	Achieved target?	NO	NO	YES	YES
Action	Bonus payment	NO	NO	NO	NO

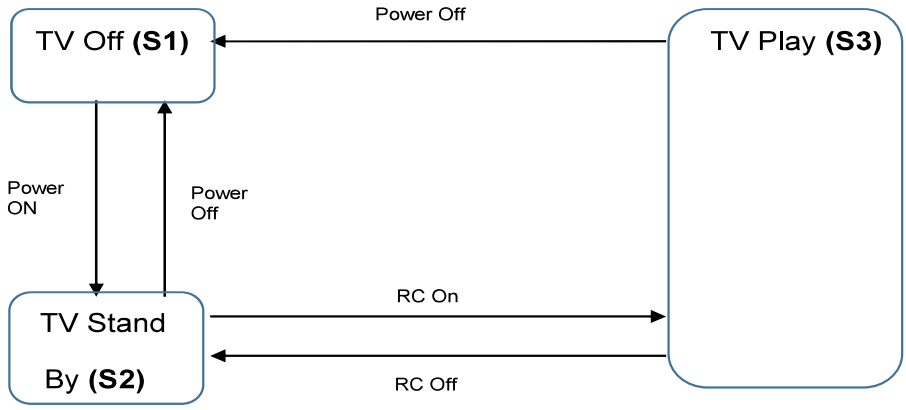
Which test case for a real life scenario is missing in the above decision table?

a) Condition1 = YES, Condition2 = NO, Condition3 = YES, Action= NO
b) Condition1 = YES, Condition2 = YES, Condition3 = NO, Action= YES
c) Condition1 = NO, Condition2 = NO, Condition3 = YES, Action= NO
d) Condition1 = NO, Condition2 = YES, Condition3 = NO, Action= NO

Select ONE option.

Question #28 (1 Point)

Which of the following statements about the given state transition diagram and table of test cases is TRUE?



Test Case	1	2	3	4	5
Start State	S1	S2	S2	S3	S3
Input	Power On	Power Off	RC On	RC Off	Power Off
Expected Final State	S2	S1	S3	S2	S1

a) The given test cases can be used to cover both valid and invalid transitions in the state transition diagram.
b) The given test cases represent all possible valid transitions in the state transition diagram.
c) The given test cases represent only some of the valid transitions in the state transition diagram.
d) The given test cases represent pairs of transitions in the state transition diagram.

Select ONE option.

Question #29 (1 Point)

A video application has the following requirement: The application shall allow playing a video on the following display resolution:

1. 640x480.
2. 1280x720.
3. 1600x1200.
4. 1920x1080.

Which of the following list of test cases is a result of applying the equivalence partitioning test technique to test this requirement?

a) Verify that the application can play a video on a display of size 1920x1080 (1 test case).
b) Verify that the application can play a video on a display of size 640x480 and 1920x1080 (2 test cases).
c) Verify that the application can play a video on each of the display sizes in the requirement (4 test cases).
d) Verify that the application can play a video on any one of the display sizes in the requirement (1 test case).

Select ONE option.

Question #30 (1 Point)

Which of the following statements BEST describes how tasks are divided between the test manager and the tester?

a) The test manager plans testing activities and chooses the standards to be followed, while the tester chooses the tools and their guidelines to be used.
b) The test manager plans and controls the testing activities, while the tester specifies the tests and decides on the test automation framework.
c) The test manager plans, monitors, and controls the testing activities, while the tester designs tests and decides on the release of the test object.
d) The test manager plans and organizes the testing and specifies the test cases, while the tester prioritizes and executes the tests.

Select ONE option.

Question #31 (1 Point)

Which of the following metrics would be MOST useful to monitor during test execution?

a) Percentage of executed test cases.
b) Average number of testers involved in the test execution.
c) Coverage of requirements by source code.
d) Percentage of test cases already created and reviewed .

Select ONE option.

Question #32 (1 Point)

Which TWO of the following can affect and be part of the (initial) test planning?

a) Budget limitations.
b) Test objectives.
c) Test log.
d) Failure rate.
e) Use cases.

Select TWO options.

Question #33 (1 Point)

Which of the following lists contains only typical exit criteria from testing?

a) Reliability measures, test coverage, test cost, schedule and status about fixing errors and remaining risks.
b) Reliability measures, test coverage, degree of tester's independence and product completeness.
c) Reliability measures, test coverage, test cost, availability of test environment, time to market and product completeness.
d) Time to market, remaining defects, tester qualification, availability of testable use cases, test coverage and test cost.

Select ONE option.

Question #34 (1 Point)

Which one of the following is NOT included in a test summary report?

a) Defining pass/fail criteria and objectives of testing.
b) Deviations from the test approach.
c) Measurements of actual progress against exit criteria.
d) Evaluation of the quality of the test item.

Select ONE option.

Question #35 (1 Point)

The project develops a "smart" heating thermostat. The control algorithms of the thermostat were modeled as Matlab/Simulink models and run on the internet connected server. The thermostat uses the specifications of the server to trigger the heating valves.

The test manager has defined the following test strategy/approach in the test plan:

1. The acceptance test for the whole system is executed as an experience-based test.
2. The control algorithms on the server are tested during implementation using continuous integration.
3. The functional test of the thermostat is performed as risk-based testing.
4. The security tests of data / communication via the internet are executed together with external security experts.

What four common types of test strategies/approaches did the test manager implement in the test plan?

a) methodical, analytical, reactive and performance preserving.
b) analytical, model-based, consultative and reactive.
c) model-based, methodical, analytical and consultative.
d) performance-preserving, consultative, reactive and methodical.

Select ONE option.

Question #36 (1 Point)

Which one of the following is the characteristic of a metrics-based approach for test estimation?

a) Budget which was used by a previous similar test project.
b) Overall experience collected in interviews with test managers.
c) Estimation of effort for test automation agreed in the test team.
d) Average of calculations collected from business experts.

Select ONE option.

Question #37 (1 Point)

As a test manager you are responsible for testing the following requirements:

R1 - Process anomalies

R2 - Synchronization

R3 - Approval

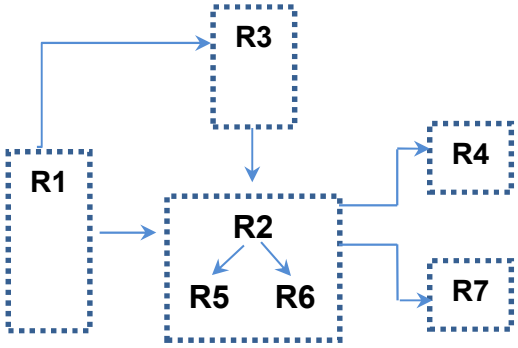
R4 - Problem solving

R5 - Financial data

R6 - Diagram data

R7 - Changes to the user profile

Notation: Logical requirement dependencies (A -> B means, that B depends on A):



Which one of the following options structures the test execution schedule according to the requirement dependencies?

a) R1 -> R3 -> R4 -> R7 -> R2 -> R5 -> R6 .
b) R1 -> R3 -> R2 -> R4 -> R7 -> R5 -> R6.
c) R1 -> R3 -> R2 -> R5 -> R6 -> R4 -> R7.
d) R1 -> R2 -> R5 -> R6 -> R3 -> R4 -> R7.

Select ONE option.

Question #38 (1 Point)

You are testing a new version of software for a coffee machine. The machine can prepare different types of coffee based on four categories. i.e., coffee size, sugar, milk, and syrup. The criteria are as follows:

- Coffee size (small, medium, large),
- Sugar (none, 1 unit, 2 units, 3 units, 4 units),
- Milk (yes or no),
- Coffee flavor syrup (no syrup, caramel, hazelnut, vanilla).

Now you are writing a defect report with the following information:

Title: Low coffee temperature.
Short summary: When you select coffee with milk, the time for preparing coffee is too long and the temperature of the beverage is too low (less than 40 °C)
Expected result: The temperature of coffee should be standard (about 75 °C).
Degree of risk: Medium
Priority: Normal

What valuable information was omitted in the above defect report?

a) The actual test result.
b) Data identifying the tested coffee machine.
c) Status of the defect.
d) Ideas for improving the test case.

Select ONE option.

Question #39 (1 Point)

Which one of the following is MOST likely to be a benefit of test execution tools?

a) It is easy to create regression tests.
b) It is easy to maintain version control of test assets.
c) It is easy to design tests for security testing.
d) It is easy to run regression tests.

Select ONE option.

Question #40 (1 Point)

Which test tool (A-D) is characterized by the classification (1-4) below?

1. Tool support for management of testing and testware.
2. Tool support for static testing.
3. Tool support for test execution and logging.
4. Tool support for performance measurement and dynamic analysis.

A. Coverage tools.
B. Configuration management tools.
C. Review tools.
D. Monitoring tools.

a) 1A, 2B, 3D, 4C.
b) 1B, 2C, 3D, 4A.
c) 1A, 2C, 3D, 4B.
d) 1B, 2C, 3A, 4D.

Select ONE option.

Questions

Question #1 (1 Point)

Which of the following provides the BEST description of a test case?

a) A document specifying a sequence of actions for the execution of a test. Also known as test script or manual test script.
b) A set of input values and expected results, with execution preconditions and execution postconditions, developed for a particular test condition.
c) An attribute of a system specified by requirements documentation (for example reliability, usability or design constraints) that is executed in a test.
d) An item or event of a system that could be verified by one or more test conditions, e.g., a function, transaction, feature, quality attribute, or structural element.

Select ONE option.

Question #2 (1 Point)

Which of the following is a major objective of testing?

a) To prevent defects.
b) To validate the project plan works as required.
c) To gain confidence in the development team.
d) To make release decisions for the system under test.

Select ONE option.

Question #3 (1 Point)

Which of the following is an example of a failure in a car cruise control system?

a) The developer of the system forgot to rename variables after a cut-and-paste operation.
b) Unnecessary code that sounds an alarm when reversing was included in the system.
c) The system stops maintaining a set speed when the radio volume is increased or decreased.
d) The design specification for the system wrongly states speeds in km/h.

Select ONE option.

Question #4 (1 Point)

Which of the following is a defect rather than a root cause in a fitness tracker?

a) Because he was unfamiliar with the domain of fitness training, the author of the requirements wrongly assumed that users wanted heartbeat in beats per hour.
b) The tester of the smartphone interface had not been trained in state transition testing, so missed a major defect.
c) An incorrect configuration variable implemented for the GPS function could cause location problems during daylight saving times.
d) Because she had never worked on wearable devices before, the designer of the user interface misunderstood the effects of reflected sunlight.

Select ONE option.

Question #5 (1 Point)

As a result of risk analysis, more testing is being directed to those areas of the system under test where initial testing found more defects than average.

Which of the following testing principles is being applied?

a) Beware of the pesticide paradox.
b) Testing is context dependent.
c) Absence-of-errors is a fallacy.
d) Defects cluster together.

Select ONE option.

Question #6 (1 Point)

Given the following test activities and tasks:

A. Test design
B. Test implementation
C. Test execution
D. Test completion

1. Entering change requests for open defect reports
2. Identifying test data to support the test cases
3. Prioritizing test procedures and creating test data
4. Analyzing discrepancies to determine their cause

Which of the following BEST matches the activities with the tasks?

a) A-2, B-3, C-4, D-1
b) A-2, B-1, C-3, D-4
c) A-3, B-2, C-4, D-1
d) A-3, B-2, C-1, D-4

Select ONE option.

Question #7 (1 Point)

Which of the following BEST describes how value is added by maintaining traceability between the test basis and test artifacts?

a) Maintenance testing can be fully automated based on changes to the initial requirements.
b) It is possible to determine if a new test case has increased coverage of the requirements.
c) Test managers can identify which testers found the highest severity defects.
d) Areas that may be impacted by side-effects of a change can be targeted by confirmation testing.

Select ONE option.

Question #8 (1 Point)

Which of the following qualities is MORE likely to be found in a tester's mindset rather than in a developer's?

a) Experience on which to base their efforts.
b) Ability to see what might go wrong.
c) Good communication with team members.
d) Attention to detail.

Select ONE option.

Question #9 (1 Point)

Given the following statements about the relationships between software development activities and test activities in the software development lifecycle:

1. Each development activity should have a corresponding testing activity.
2. Reviewing should start as soon as final versions of documents become available.
3. The design and implementation of tests should start during the corresponding development. activity
4. Testing activities should start in the early stages of the software development lifecycle.

Which of the following CORRECTLY shows which are true and false?

a) True – 1, 2; False – 3, 4
b) True – 2, 3; False – 1, 2
c) True – 1, 2, 4; False – 3
d) True – 1, 4; False – 2, 3

Select ONE option.

Question #10 (1 Point)

Given that the testing being performed has the following attributes:

- based on interface specifications;
- focused on finding failures in communication;
- the test approach uses both functional and structural test types.

Which of the following test levels is MOST likely being performed?

a) Component integration testing.
b) Acceptance testing.
c) System testing.
d) Component testing.

Select ONE option.

Question #11 (1 Point)

Which of the following statements about test types and test levels is CORRECT?

a) Functional and non-functional testing can be performed at system and acceptance test levels, while white-box testing is restricted to component and integration testing.
b) Functional testing can be performed at any test level, while white-box testing is restricted to component testing.
c) It is possible to perform functional, non-functional and white-box testing at any test level.
d) Functional and non-functional testing can be performed at any test level, while Whitebox testing is restricted to component and integration testing.

Select ONE option.

Question #12 (1 Point)

Which of the following statements BEST compares the purposes of confirmation testing and regression testing?

a) The purpose of regression testing is to ensure that all previously run tests still work correctly, while the purpose of confirmation testing is to ensure that any fixes made to one part of the system have not adversely affected other parts.
b) The purpose of confirmation testing is to check that a previously found defect has been fixed, while the purpose of regression testing is to ensure that no other parts of the system have been adversely affected by the fix.
c) The purpose of regression testing is to ensure that any changes to one part of the system have not caused another part to fail, while the purpose of confirmation testing is to check that all previously run tests still provide the same results as before.
d) The purpose of confirmation testing is to confirm that changes to the system were made successfully, while the purpose of regression testing is to run tests that previously failed to ensure that they now work correctly.

Select ONE option.

Question #13 (1 Point)

Which of the following statements CORRECTLY describes a role of impact analysis in Maintenance Testing?

a) Impact analysis is used when deciding if a fix to a maintained system is worthwhile.
b) Impact analysis is used to identify how data should be migrated into the maintained system.
c) Impact analysis is used to decide which hot fixes are of most value to the user.
d) Impact analysis is used to determine the effectiveness of new maintenance test cases.

Select ONE option.

Question #14 (1 Point)

Which of the following statements CORRECTLY reflects the value of static testing?

a) By introducing reviews, we have found that both the quality of specifications and the time required for development and testing have increased.
b) Using static testing means we have better control and cheaper defect management due to the ease of removing defects later in the lifecycle.
c) Now that we require the use of static analysis, missed requirements have decreased and communication between testers and developers has improved.
d) Since we started using static analysis, we -find coding defects that might have not been found by performing only dynamic testing.

Select ONE option.

Question #15 (1 Point)

Which of the following sequences BEST shows the main activities of the work product review process?

a) Initiate review – Reviewer selection – Individual review – Issue communication and analysis – Rework
b) Planning & preparation – Overview meeting – Individual review – Fix– Report
c) Preparation – Issue Detection – Issue communication and analysis – Rework – Report
d) Plan – Initiate review – Individual review – Issue communication and analysis – Fix defects & report

Select ONE option.

Question #16 (1 Point)

Which of the following CORRECTLY matches the roles and responsibilities in a formal review?

a) Manager – Decides on the execution of reviews
b) Review Leader - Ensures effective running of review meetings
c) Scribe – Fixes defects in the work product under review
d) Moderator – Monitors ongoing cost-effectiveness

Select ONE option.

Question #17 (1 Point)

The reviews being used in your organization have the following attributes:

- There is a role of a scribe
- The purpose is to detect potential defects
- The review meeting is led by the author
- Reviewers find potential defects by individual review
- A review report is produced

Which of the following review types is MOST likely being used?

a) Informal Review
b) Walkthrough
c) Technical Review
d) Inspection

Select ONE option.

Question #18 (1 Point)

You have been asked to take part in a checklist-based review of the following excerpt from the requirements specification for a library system:

Librarians can:

1. Register new borrowers.
2. Return books from borrowers.
3. Accept fines from borrowers.
4. Add new books to the system with their ISBN, author and title.
5. Remove books from the system.
6. Get system responses within 5 seconds.

Borrowers can:

7. Borrow a maximum of 3 books at one time.
8. View the history of books they have borrowed/reserved.
9. Be fined for failing to return a book within 3 weeks.
10. Get system responses within 3 seconds.
11. Borrow a book at no cost for a maximum of 4 weeks.
12. Reserve books (if they are on-loan).

All users (librarians and borrowers):

13. Can search for books by ISBN, author, or title.
14. Can browse the system catalogue.
15. The system shall respond to user requests within 3 seconds.
16. The user interface shall be easy-to-use.

You have been assigned the checklist entry that requires you to review the specification for inconsistencies between individual requirements (i.e. conflicts between requirements).

Which of the following CORRECTLY identifies inconsistencies between pairs of requirements?

a) 6-10, 6-15, 7-12
b) 6-15, 9-11
c) 6-10, 6-15, 9-11
d) 6-15, 7-12

Select ONE option.

Question #19 (1 Point)

Which of the following provides the BEST description of exploratory testing?

a) A testing practice in which an in-depth investigation of the background of the test object is used to identify potential weaknesses that are examined by test cases.
b) An approach to testing whereby the testers dynamically design and execute tests based on their knowledge, exploration of the test item and the results of previous tests.
c) An approach to test design in which test activities are planned as uninterrupted sessions of test analysis and design, often used in conjunction with checklist-based testing.
d) Testing based on the tester's experience, knowledge and intuition.

Select ONE option.

Question #20 (1 Point)

Which of the following BEST matches the descriptions with the different categories of test techniques?

1. Coverage is measured based on a selected structure of the test object.
2. The processing within the test object is checked.
3. Tests are based on defects' likelihood and their distribution.
4. Deviations from the requirements are checked.
5. User stories are used as the test basis.

Black - Black-box test techniques
White - White-box test techniques
Experience - Experience-based test techniques

a) Black – 4, 5 White – 1, 2 Experience – 3
b) Black – 3 White – 1, 2 Experience – 4, 5
c) Black – 4 White – 1, 2 Experience – 3, 5
d) Black – 1, 3, 5 White – 2 Experience – 4

Select ONE option.

Question #21 (1 Point)

A fitness app measures the number of steps that are walked each day and provides feedback to encourage the user to keep fit.

The feedback for different numbers of steps should be:

Up to 1000 - Couch Potato!
Above 1000, up to 2000 - Lazy Bones!
Above 2000, up to 4000 - Getting There!
Above 4000, up to 6000 - Not Bad!
Above 6000 - Way to Go!

Which of the following sets of test inputs would achieve the highest equivalence partition coverage?

a) 0, 1000, 2000, 3000, 4000
b) 1000, 2001, 4000, 4001, 6000
c) 123, 2345, 3456, 4567, 5678
d) 666, 999, 2222, 5555, 6666

Select ONE option.

Question #22 (1 Point)

A daily radiation recorder for plants produces a sunshine score based on a combination of the number of hours a plant is exposed to the sun (below 3 hours, 3 to 6 hours or above 6 hours) and the average intensity of the sunshine (very low, low, medium, high).

Given the following test cases:

	Hours	Intensity	Score
T1	1.5	v. low	10
T2	7.0	medium	60
T3	0.5	v. low	10

What is the minimum number of additional test cases that are needed to ensure full coverage of all valid INPUT equivalence partitions?

a) 1
b) 2
c) 3
d) 4

Select ONE option.

Question #23 (1 Point)

A smart home app measures the average temperature in the house over the previous week and provides feedback to the occupants on their environmental-friendliness based on this temperature.

The feedback for different average temperature ranges (to the nearest °C) should be:

Up to 10°C - Icy Cool!
11°C to 15°C - Chilled Out!
16°C to 19°C - Cool Man!
20°C to 22°C - Too Warm!
Above 22°C - Hot & Sweaty!

Using two-point BVA, which of the following sets of test inputs provides the highest level of boundary coverage?

a) 0°C, 11°C, 20°C, 22°C, 23°C
b) 9°C, 15°C, 19°C, 23°C, 100°C
c) 10°C, 16°C, 19°C, 22°C, 23°C
d) 14°C, 15°C, 18°C, 19°C, 21°C, 22°C

Select ONE option.

Question #24 (1 Point)

Decision table testing is being performed on a speeding fine system. Two test cases have already been generated for rules 1 and 4, which are shown below:

Rules		R1	R4
Conditions	Speed > 50	T	F
	School Zone	T	F
Actions	$250 Fine	F	F
	Jail	T	F

Given the following additional test cases:

Rules		DT1	DT2	DT3	DT4
Input	Speed	55	44	66	77
	School Zone	T	T	T	F
Expected Result	$250 Fine	F	F	F	T
	Jail	T	F	T	F

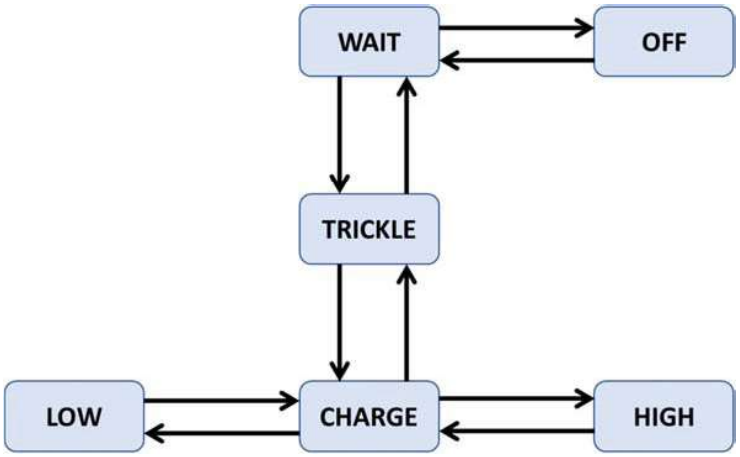
Which two of the additional test cases would achieve full coverage of the complete decision table (when combined with the test cases that have already been generated for rules 1 and 4)?

a) DT1, DT2
b) DT2, DT3
c) DT2, DT4
d) DT3, DT4

Select ONE option.

Question #25 (1 Point)

Given the following state model of a battery charger software:



Which of the following sequences of transitions provides the highest level of transition coverage for the model?

a) OFF → WAIT → CHARGE → OFF → HIGH → WAIT → CHARGE → TRICKLE → LOW

b) WAIT → TRICKLE → TRICKLE → WAIT → CHARGE → OFF → LOW → WAIT → CHARGE

c) HIGH → CHARGE → WAIT → LOW → TRICKLE → CHARGE → WAIT → TRICKLE → TRICKLE

d) WAIT → TRICKLE → TRICKLE → CHARGE → WAIT → HIGH → OFF → CHARGE → WAIT

Select ONE option.

Question #26 (1 Point)

Which of the following statements BEST describes how test cases are derived from a use case?

a) Test cases are created to exercise defined basic, exceptional and error behaviors performed by the system under test in collaboration with actors.
b) Test cases are derived by identifying the components included in the use case and creating integration tests that exercise the interactions of these components.
c) Test cases are generated by analyzing the interactions of the actors with the system to ensure the user interfaces are easy to use.
d) Test cases are derived to exercise each of the decision points in the business process flows of the use case, to achieve 100% decision coverage of these flows.

Select ONE option.

Question #27 (1 Point)

Which of the following descriptions of statement coverage is CORRECT?

a) Statement coverage is a measure of the number of lines of source code (minus comments) exercised by tests.
b) Statement coverage is a measure of the proportion of executable statements in the source code exercised by tests.
c) Statement coverage is a measure of the percentage of lines of source code exercised by tests.
d) Statement coverage is a measure of the number of executable statements in the source code exercised by tests.

Select ONE option.

Question #28 (1 Point)

Which of the following descriptions of decision coverage is CORRECT?

a) Decision coverage is a measure of the percentage of possible paths through the source code exercised by tests.
b) Decision coverage is a measure of the percentage of business flows through the component exercised by tests.
c) Decision coverage is a measure of the 'if' statements in the code that are exercised with both the true and false outcomes.
d) Decision coverage is a measure of the proportion of decision outcomes in the source code exercised by tests.

Select ONE option.

Question #29 (1 Point)

Which of the following BEST describes the concept behind error guessing?

a) Error guessing requires you to imagine you are the user of the test object and guess mistakes the user could make interacting with it.
b) Error guessing involves using your personal experience of development and the mistakes you made as a developer.
c) Error guessing involves using your knowledge and experience of defects found in the past and typical mistakes made by developers.
d) Error guessing requires you to rapidly duplicate the development task to identify the sort of mistakes a developer might make.

Select ONE option.

Question #30 (1 Point)

Which of the following BEST explains a benefit of independent testing?

a) The use of an independent test team allows project management to assign responsibility for the quality of the final deliverable to the test team, so ensuring everyone is aware that quality is the test team's overall responsibility.
b) If a test team external to the organization can be afforded, then there are distinct benefits in terms of this external team not being so easily swayed by the delivery concerns of project management and the need to meet strict delivery deadlines.
c) An independent test team can work totally separately from the developers, need not be distracted with changing project requirements, and can restrict communication with the developers to defect reporting through the defect management system.
d) When specifications contain ambiguities and inconsistencies, assumptions are made on their interpretation, and an independent tester can be useful in questioning those assumptions and the interpretation made by the developer.

Select ONE option.

Question #31 (1 Point)

Which of the following tasks is MOST LIKELY to be performed by the test manager?

a) Write test summary reports based on the information gathered during testing.
b) Review tests developed by others.
c) Create the detailed test execution schedule.
d) Analyze, review, and assess requirements, specifications and models for testability.

Select ONE option.

Question #32 (1 Point)

Given the following examples of entry and exit criteria:

1. The original testing budget of $30,000 plus contingency of $7,000 has been spent.
2. 96% of planned tests for the drawing package have been executed and the remaining tests are now out of scope.
3. The trading performance test environment has been designed, set-up and verified.
4. Current status is no outstanding critical defects and two high-priority ones.
5. The autopilot design specifications have been reviewed and reworked.
6. The tax rate calculation component has passed unit testing.

Which of the following BEST categorizes them as entry and exit criteria:

a) Entry criteria – 5, 6 Exit criteria – 1, 2, 3, 4
b) Entry criteria – 2, 3, 6 Exit criteria – 1, 4, 5
c) Entry criteria – 1, 3 Exit criteria – 2, 4, 5, 6
d) Entry criteria – 3, 5, 6 Exit criteria – 1, 2, 4

Select ONE option.

Question #33 (1 Point)

Given the following priorities and dependencies for these test cases:

Test Case	Priority	Technical dependency on:	Logical dependency on:
TC1	High	TC4	
TC2	Low		
TC3	High		TC4
TC4	Medium		
TC5	Low		TC2
TC6	Medium	TC5	

Which of the following test execution schedules BEST considers the priorities and technical and logical dependencies?

a) TC1 – TC3 – TC4 – TC6 – TC2 – TC5
b) TC4 – TC3 – TC1 – TC2 – TC5 – TC6
c) TC4 – TC1 – TC3 – TC5 – TC6 – TC2
d) TC4 – TC2 – TC5 – TC1 – TC3 – TC6

Select ONE option.

Question #34 (1 Point)

Which of the following statements about test estimation approaches is CORRECT?

a) With the metrics-based approach, the estimate is based on test measures from the project and so this estimate is only available after the testing starts.
b) With the expert-based approach, a group of expert users identified by the client recommends the necessary testing budget.
c) With the expert-based approach, the test managers responsible for the different testing activities predict the expected testing effort.
d) With the metrics-based approach, an average of the testing costs recorded from several past projects is used as the testing budget.

Select ONE option.

Question #35 (1 Point)

Which of the following BEST defines risk level?

a) Risk level is calculated by adding together the probabilities of all problem situations and the financial harm that results from them.
b) Risk level is estimated by multiplying the likelihood of a threat to the system by the chance that the threat will occur and will result in financial damage
c) Risk level is determined by a combination of the probability of an undesirable event and the expected impact of that event.
d) Risk level is the sum of all potential hazards to a system multiplied by the sum of all potential losses from that system.

Select ONE option.

Question #36 (1 Point)

Which of the following is MOST likely to be an example of a PRODUCT risk?

a) The expected security features may not be supported by the system architecture.
b) The developers may not have time to fix all the defects found by the test team.
c) The test cases may not provide full coverage of the specified requirements.
d) The performance test environment may not be ready before the system is due for delivery.

Select ONE option.

Question #37 (1 Point)

Which of the following is LEAST likely to be an example of product risk analysis CORRECTLY influencing the testing?

a) The potential impact of security flaws has been identified as being particularly high, so security testing has been prioritized ahead of some other testing activities.
b) Testing has found the quality of the network module to be higher than expected, so additional testing will now be performed in that area.
c) The users had problems with the user interface of the previous system, so additional usability testing is planned for the replacement system.
d) The time needed to load web pages is crucial to the success of the new website, so an expert in performance testing has been employed for this project.

Select ONE option.

Question #38 (1 Point)

You are performing system testing of a train booking system and have found that occasionally the system reports that there are no available trains when you believe that there should be, based on the test cases you have run. You have provided the development manager with a summary of the defect and the version of the system you are testing. The developers recognize the urgency of the defect and are now waiting for you to provide more details so that they can fix it.

Given the following pieces of information:

1. Degree of impact (severity) of the defect.
2. Identification of the test item.
3. Details of the test environment.
4. Urgency/priority to fix.
5. Actual results.
6. Reference to test case specification.

Apart from the description of the defect, which includes a database dump and screenshots, which of the pieces of information would be MOST useful to include in the initial defect report?

a) 1, 2, 6
b) 1, 4, 5, 6
c) 2, 3, 4, 5
d) 3, 5, 6

Select ONE option.

Question #39 (1 Point)

Given the following test activities and test tools:

1. Performance measurement and dynamic analysis.
2. Test execution and logging.
3. Management of testing and testware.
4. Test design.

A. Requirements coverage tools.
B. Dynamic analysis tools.
C. Test data preparation tools.
D. Defect management tools.

Which of the following BEST matches the activities and tools?

a) 1 – B, 2 – C, 3 – D, 4 – A
b) 1 – B, 2 – A, 3 – C, 4 – D
c) 1 – B, 2 – A, 3 – D, 4 – C
d) 1 – A, 2 – B, 3 – D, 4 – C

Select ONE option.

Question #40 (1 Point)

Which of the following is MOST likely to be used as a reason for using a pilot project to introduce a tool into an organization?

a) The need to evaluate how the tool fits with existing processes and practices and determining what would need to change.
b) The need to evaluate the test automation skills and training, mentoring and coaching needs of the testers who will use the tool.
c) The need to evaluate whether the tool provides the required functionality and does not duplicate existing test tools.
d) The need to evaluate the tool vendor in terms of the training and other support they provide.

Select ONE option.

Questions

Question #1 (1 Point)

What is quality?

a) Part of quality management focused on providing confidence that quality requirements will be fulfilled.
b) The degree to which a component, system or process meets specified requirements and/or user/customer needs and expectations.
c) The degree to which a component or system protects information and data so that persons or other components or systems have the degree of access appropriate to their types and levels of authorization.
d) The total costs incurred on quality activities and issues and often split into prevention costs, appraisal costs, internal failure costs and external failure costs.

Select ONE option.

Question #2 (1 Point)

Which of the following is a typical test objective?

a) Preventing defects
b) Repairing defects
c) Comparing actual results to expected results
d) Analyzing the cause of failure

Select ONE option.

Question #3 (1 Point)

A phone ringing in an adjac
ent cubicle momentarily distracts a programmer, causing the programmer to improperly program the logic that checks the upper boundary of an input variable. Later, during system testing, a tester notices that this input field accepts invalid input values. The improperly coded logic for the upper boundary check is:

a) The root cause
b) The failure
c) The error
d) The defect

Select ONE option.

Question #4 (1 Point)

A product owner says that your role as a tester on an Agile team is to catch all the bugs before the end of each iteration. Which of the following is a testing principle that could be used to respond to this statement?

a) Defect clustering
b) Testing shows the presence of defects
c) Absence of error fallacy
d) Root cause analysis

Select ONE option.

Question #5 (1 Point)

Programmers often write and execute unit tests against code which they have written. During this self-testing activity, which of the following is a tester mindset that programmers should adopt to perform this unit testing effectively?

a) Good communication skills
b) Code coverage
c) Evaluating code defects
d) Attention to detail

Select ONE option.

Question #6 (1 Point)

Consider the following testing activities:

1. Selecting regression tests
2. Evaluating completeness of test execution
3. Identifying which user stories have open defect reports
4. Evaluating whether the number of tests for each requirement is consistent with the level of product risk

Consider the following ways traceability can help testing:

A. Improve understandability of test status reports to include status of test basis items
B. Make testing auditable
C. Provide information to assess process quality
D. Analyze the impact of changes

Which of the following best matches the testing activity with how traceability can assist that activity?

a) 1D, 2B, 3C, 4A
b) 1B, 2D, 3A, 4C
c) 1D, 2C, 3A, 4B
d) 1D, 2B, 3A, 4C

Select ONE option.

Question #7 (1 Point)

A tester participated in a discussion about proposed database structure. The tester identified a potential performance problem related to certain common user searches. This possible problem was explained to the development team. Which of the following is a testing contribution to success that BEST matches this situation?

a) Enabling required tests to be identified at an early stage
b) Ensuring processes are carried out properly
c) Reducing the risk of fundamental design defects
d) Reducing the risk of untestable functionality

Select ONE option.

Question #8 (1 Point)

Which of the following is an example of a task that can be carried out as part of the test process?

a) Analyzing a defect
b) Designing test data
c) Assigning a version to a test item
d) Writing a user story

Select ONE option.

Question #9 (1 Point)

You are running a performance test with the objective of finding possible network bottlenecks in interfaces between components of a system. Which of the following statements describes this test?

a) A functional test during the integration test level
b) A non-functional test during the integration test level
c) A functional test during the component test level
d) A non-functional test during the component test level

Select ONE option.

Question #10 (1 Point)

Which of the following statements is true?

a) Impact analysis is useful for confirmation testing during maintenance testing
b) Confirmation testing is useful for regression testing during system design
c) Impact analysis is useful for regression testing during maintenance testing
d) Confirmation testing is useful for impact analysis during maintenance testing

Select ONE option.

Question #11 (1 Point)

Consider the following types of defects that a test level might focus on:

1. Defects in separately testable modules or objects
2. Not focused on identifying defects
3. Defects in interfaces and interactions
4. Defects in the whole test object

Which of the following list correctly matches test levels from the Foundation syllabus with the defect focus options given above?

a) 1 = performance test; 2 = component test; 3 = system test; 4 = acceptance test
b) 1 = component test; 2 = acceptance test; 3 = system test; 4 = integration test
c) 1 = component test; 2 = acceptance test; 3 = integration test; 4 = system test
d) 1 = integration test; 2 = system test; 3 = component test; 4 = acceptance test

Select ONE option.

Question #12 (1 Point)

A mass market operating system software product is designed to run on any PC hardware with an x86-family processor. You are running a set of tests to look for defects related to support of the various PCs that use such a processor and to build confidence that important PC brands will work. What type of test are you performing?

a) Performance test
b) Processor test
c) Functional test
d) Portability test

Select ONE option.

Question #13 (1 Point)

During an Agile development effort, a product owner discovers a previously-unknown regulatory requirement that applies to most of the user stories within a particular epic. The user stories are updated to provide for the necessary changes in software behavior. The programmers on the team are modifying the code appropriately. As a tester on the team, what types of tests will you run?

a) Confirmation tests
b) Regression tests
c) Functional tests
d) Change-related tests

Select ONE option.

Question #14 (1 Point)

In a formal review, what is the role name for the participant who runs an inspection meeting?

a) Facilitator
b) Programmer
c) Author
d) Project manager

Select ONE option.

Question #15 (1 Point)

You are reading a user story in the product backlog to prepare for a meeting with the product owner and a developer, noting potential defects as you go. Which of the following statements is true about this activity?

a) It is not a static test, because static testing involves execution of the test object
b) It is not a static test, because static testing is always performed using a tool
c) It is a static test, because any defects you find could be found cheaper during dynamic testing
d) It is a static test, because static testing does not involve execution of the test object.

Select ONE option.

Question #16 (1 Point)

During a period of intensive project overtime, a system architecture document is sent to various project participants, announcing a previously-unplanned technical review to occur in one week. No adjustments are made to the participants' list of assigned tasks. Based on this information alone, which of the following is a factor for review success that is MISSING?

a) Appropriate review type
b) Adequate time to prepare
c) Sufficient metrics to evaluate the author
d) Well-managed review meeting

Select ONE option.

Question #17 (1 Point)

You are working as a tester on an Agile team, and have participated in over two dozen user story refinement sessions with the product owner and the developers on the team at the start of each iteration. As the reviews have gotten more effective at detecting defects in user stories and the product owner more adept at correcting those defects, you and the team notice that the team's velocity, as shown in your burndown charts, has started to increase. Which of the following is a benefit of static testing that MOST DIRECTLY applies to increased velocity?

a) Increasing total cost of quality
b) Reducing testing cost
c) Increasing development productivity
d) Reducing total cost of quality

Select ONE option.

Question #18 (1 Point)

You are working on a video game development project, using Agile methods. It is based on Greek mythology and history, and players can play key roles in scenarios such as the battles between the Greeks and Trojans.

Consider the following user story and its associated acceptance criteria:

As a player,
I want to be able to acquire the Rod of Midas (a new magic object),
so that I can turn objects and other players into gold
AC1: The Rod must work on any object or player, no matter what size, which can be touched anywhere by the player holding the Rod
AC2: Holding the Rod does not change the player holding it into gold
AC3: Any object or player touched by the Rod transforms completely into gold within one millisecond
AC4: The Rod appears as shown in Prototype O.W.RoM
AC5: The transformation starts at the point of contact with the Rod and moves at a rate of one meter per millisecond

You are participating in a checklist-based review session of this user story.

This user story and its associated acceptance criteria contain which of the following typical defects identified by static testing in this type of work product?

a) Deviation from standards
b) Contradiction
c) Security vulnerability
d) Coverage gaps

Select ONE option.

Question #19 (1 Point)

What is decision coverage?

a) The percentage of condition outcomes that have been exercised by a test suite
b) Decision coverage is a synonym for statement coverage
c) The percentage of executable statements that have been exercised by a test suite
d) The percentage of decision outcomes that have been exercised by a test suite

Select ONE option.

Question #20 (1 Point)

Prior to an iteration planning session, you are studying a user story and its acceptance criteria, deriving test conditions and associated test cases from the user story as a way of applying the principle of early QA and test. What test technique are you applying?

a) White-box
b) Black-box
c) Experience-based
d) Error guessing

Select ONE option.

Question #21 (1 Point)

Which of the following is a true statement about exploratory testing?

a) More experienced testers who have tested similar applications and technologies are likely to do better than less experienced testers at exploratory testing
b) Exploratory testing does not identify any additional tests beyond those that would result from formal test techniques
c) The time required to complete an exploratory testing session cannot be predicted in advance
d) Exploratory testing can involve the use of black-box techniques but not white-box techniques

Select ONE option.

Question #22 (1 Point)

You are testing a mobile app that allows customers to access and manage their bank accounts. You are running a test suite that involves evaluating each screen and each field on each screen against a general list of user interface best practices, derived from a popular book on the topic, that maximize attractiveness, ease-of-use, and accessibility for such apps. Which of the following options BEST categorizes the test technique you are using?

a) Specification-based
b) Exploratory
c) Checklist-based
d) Error guessing

Select ONE option.

Question #23 (1 Point)

Consider a mobile app that allows customers to access and manage their bank accounts. A user story has just been added to the set of features that checks customers' social media accounts and bank records to give personalized greetings on birthdays and other personal milestones. Which of the following test techniques could a PROGRAMMER use during a unit test of the code to ensure that coverage of situations when the greetings ARE supposed to occur and when the greetings ARE NOT supposed to occur?

a) Statement testing
b) Exploratory testing
c) State transition testing
d) Decision testing

Select ONE option.

Question #24 (1 Point)

A batch application has been in production unchanged for over two years. It runs overnight once a month to produce statements that will be e-mailed to customers. For each customer, the application goes through every account and lists every transaction on that account in the last month. It uses a nested-loop structure to process customers (outer loop), each customer's accounts (middle loop), and each account's transactions (inner loop).

One night, the batch application terminates prematurely, failing to e-mail statements to some customers, when it encounters a customer with one account for which no transactions occurred in the last month. This is a very unusual situation and has not occurred in the years since this application was placed in production.

While fixing the defect, a programmer asks you to recommend test techniques that are effective against this kind of defect. Which of the following test techniques would **most** likely have been able to detect the underlying defect?

a) Decision testing
b) Statement testing
c) Checklist-based testing
d) Error guessing

Select ONE option.

Question #25 (1 Point)

You are testing an unattended gasoline pump that only accepts credit cards. Once the credit card is validated, the pump nozzle placed into the tank, and the desired grade selected, the customer enters the desired amount of fuel in gallons using the keypad. The keypad only allows the entry of digits. Fuel is sold in tenths (0.1) of a gallon, up to 50.0 gallons.

Which of the following is a minimum set of desired amounts that covers the **equivalence partitions** for this input?

a) 0.0, 20.0, 60.0
b) 0.0, 0.1, 50.0
c) 0.0, 0.1, 50.0, 70.0
d) -0.1, 0.0, 0.1, 49.9, 50.0, 50.1

Select ONE option.

Question #26 (1 Point)

You are testing an e-commerce system that sells cooking supplies such as spices, flour, and other items in bulk. The units in which the items are sold are either grams (for spices and other expensive items) or kilograms (for flour and other inexpensive items). Regardless of the units, the smallest valid order amount is 0.5 units (e.g., half a gram of cardamom pods) and the largest valid order amount is 25.0 units (e.g., 25 kilograms of sugar). The precision of the units field is 0.1 units.

Which of the following is a set of input values that cover the boundary values with two-point boundary values for this field?

a) 0.3, 10.0, 28.0
b) 0.4, 0.5, 0.6, 24,9,25,0, 25.1
c) 0.4, 0.5, 25.0 25.1
d) 0.5, 0.6, 24.9, 25.0

Select ONE option.

Question #27 (1 Point)

Consider the following decision table for the portion of an online airline reservation system that allows frequent flyers to redeem points for reward travel:

Condition	1	2	3
Account/password okay	N	Y	Y
Sufficient points	-	N	Y
Action			
Show flight history	N	Y	Y
Allow reward travel	N	N	Y

Suppose that there are two equivalence partitions for the condition where *Account/password okay* is not true, one where the account is invalid and another where the account is valid but the password is invalid. Suppose that there is only one equivalence partition corresponding to the condition where *Account/password okay* is true, where both the account and password are valid.

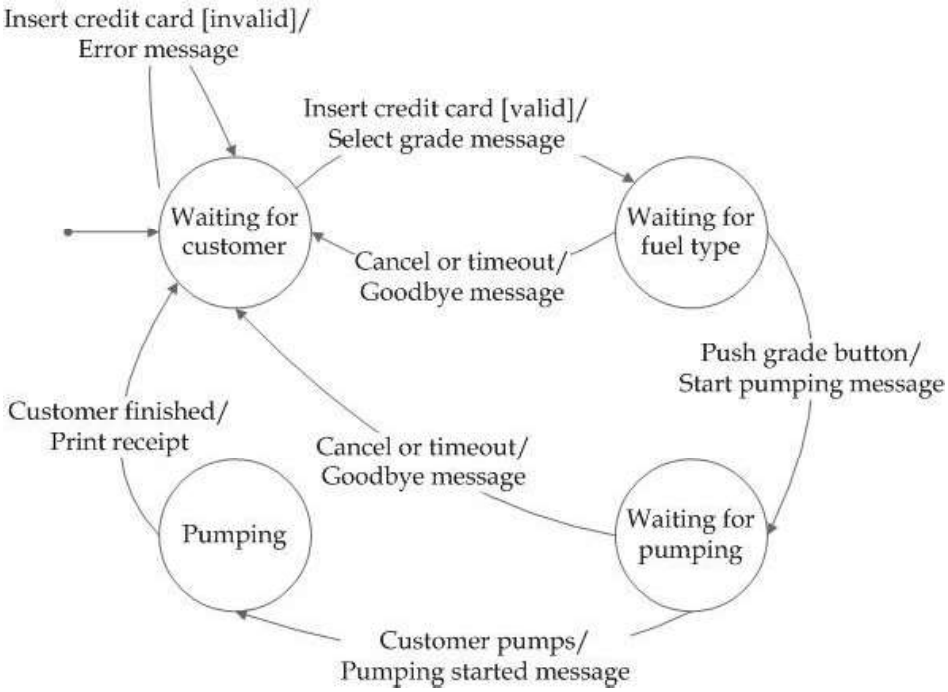
If you want to design tests to cover the equivalence partitions for *Account/password okay* and also for this portion of the decision table, what is the minimum number of tests required?

a) 2
b) 3
c) 4
d) 9

Select ONE option.

Question #28 (1 Point)

Consider the following state transition diagram for a credit-card only, unattended gasoline pump:



Assume that you want to develop the minimum number of tests to cover each transition in the state transition diagram. Assume further that each test must start at the beginning state, *Waiting for customer*, and each test ends when a transition arrives at the beginning state. How many tests do you need?

a) 4
b) 7
c) 1
d) Infinite

Select ONE option.

Question #29 (1 Point)

You are testing an e-commerce system that sells cooking supplies such as spices, flour, and other items in bulk. The units in which the items are sold are either grams (for spices and other expensive items) or kilograms (for flour and other inexpensive items). Regardless of the units, the smallest valid order amount is 0.5 units (e.g., half a gram of cardamom pods) and the largest valid order amount is 25.0 units (e.g., 25 kilograms of sugar). The precision of the units field is 0.1 units.

Which of the following is a MINIMAL set of input values that cover the **equivalence partitions** for this field?

a) 10.0, 28.0
b) 0.4, 0.5, 25.0, 25.1
c) 0.2, 0.9, 29.5
d) 12.3

Select ONE option.

Question #30 (1 Point)

You are working as a tester on an online banking system. Availability is considered one of the top product (quality) risks for the system. You find a reproducible failure that results in customers losing their connections to the bank Web site when transferring funds between common types of accounts and being unable to reconnect for between three and five minutes.

Which of the following would be a good summary for a defect report for this failure, one that captures both the essence of the failure and its impact on stakeholders?

a) Web server logs show error 0x44AB27 when running test 07.005, which is not an expected error message in /tmp filesystem
b) Developers have introduced major availability defect which will seriously upset our customers
c) Performance is slow and reliability flaky under load
d) Typical funds-transfer transaction results in termination of customer session, with a delay in availability when attempting to reconnect

Select ONE option.

Question #31 (1 Point)

You are testing a mobile app that allows users to find a nearby restaurant, based on the type of food they want to eat. Consider the following list of test cases, priorities (smaller number is high priority), and dependencies, in the following format:

Test case number	Test condition covered	Priority	Logical dependency
01.001	Select type of food	3	none
01.002	Select restaurant	2	01.001
01.003	Get directions	1	01.002
01.004	Call restaurant	1	01.002
01.005	Make reservation	3	01.002

Which of the following is a possible test execution schedule that considers both priorities and dependencies?

a) 01.001, 01.002, 01.003, 01.005, 01.004
b) 01.001, 01.002, 01.004, 01.003, 01.005
c) 01.003, 01.004, 01.002, 01.001, 01.002
d) 01.001, 01.002, 01.004, 01.005, 01.003

Select ONE option.

Question #32 (1 Point)

Which of the following is a common test metric often used to monitor BOTH test preparation and test execution?

a) Test case status
b) Defect find/fix rates
c) Test environment preparation
d) Estimated cost to find the next defect

Select ONE option.

Question #33 (1 Point)

Which of the following are two factors that can be used to determine the level of risk?

a) Testing and development
b) Dynamic and reactive
c) Statement and decision
d) Likelihood and impact

Select ONE option.

Question #34 (1 Point)

You are working as a project manager on an in-house banking software project. To prevent rework and excessive find/fix/retest cycles, the following process has been put in place for resolving a defect once it is found in the test lab:

1. The assigned developer finds and fixes the defect, then creates an experimental build
2. A peer developer reviews, unit tests, and confirmation tests the defect fix on his/her desktop
3. A tester—usually the one who found the defect—confirmation tests the defect fix in the development environment
4. Once a day, a new release with all confirmed defect fixes included, is installed in the test environment
5. The same tester from step 3 confirmation tests the defect fix in the test environment

Nevertheless, a large number of defects which the testers confirmed as fixed in the development environment (in step 3) are somehow failing confirmation testing in the test environment, with the resulting rework and cycle time outcomes. You have the highest confidence in your testers, and have ruled out mistakes or omissions in step 3.

Which of the following is the MOST likely part of the process to check next?

a) The developers, who may not be adequately testing in step 2
b) The testers, who may be confused about what to test in step 5
c) Configuration management, which may not be maintaining the integrity of the product in step 4
d) The developers, who may not be fixing defects properly in step 1

Select ONE option.

Question #35 (1 Point)

You are engaged in planning a test effort for a new mobile banking application. As part of estimation, you first meet with the proposed testers and others on the project. The team is well-coordinated and has already worked on similar projects. To verify the resulting estimate, you then refer to some industry averages for testing effort and costs on similar projects, published by a reputable consultant.

Which statement accurately describes your estimation approach?

a) A simultaneous expert-based and metrics-based approach
b) Primarily an expert-based approach, augmented with a metrics-based approach
c) Primarily a metrics-based approach, augmented with an expert-based approach
d) Primarily planning poker, checked by velocity from burndown charts.

Select ONE option.

Question #36 (1 Point)

During a project following Agile methods, you find a discrepancy between the developer's interpretation of an acceptance criteria and the product owner's interpretation, which you bring up during a user story refinement session. Which of the following is a benefit of test independence exemplified by this situation?

a) Recognizing different kinds of failures
b) Taking primary responsibility for quality
c) Removing a defect early
d) Challenging stakeholder assumptions

Select ONE option.

Question #37 (1 Point)

You are defining the process for carrying out product risk analysis as part of each iteration on an Agile project. Which of the following is the proper place to document this process in a test plan?

a) Scope of testing
b) Approach of testing
c) Metrics of testing
d) Configuration management of the test object

Select ONE option.

Question #38 (1 Point)

Consider the following list of undesirable outcomes that could occur on a mobile app development effort:

A. Incorrect totals on reports
B. Change to acceptance criteria during acceptance testing
C. Users find the soft keyboard too hard to use with your app
D. System responds too slowly to user input during search string entry
E. Testers not allowed to report test results in daily standup meetings

Which of the following properly classifies these outcomes as project and product risks?

a)	Product risks: B, E;	Project risks: A, C, D
b)	Product risks: A, C, D;	Project risks: B, E
c)	Product risks: A, C, D, E	Project risks: B
d)	Product risks: A, C	Project risks: B, D, E

Select ONE option.

Question #39 (1 Point)

You have just completed a pilot project for a regression testing tool. You understand the tool much better, and have tailored your testing process to it. You have standardized an approach to using the tool and its associated work products. Which of the following is a typical test automation pilot project goal that remains to be carried out?

a) Learn more details about the tool
b) See how the tool would fit with existing processes and practices
c) Decide on standard ways of using, managing, storing, and maintaining the tool and the test assets
d) Assess whether the benefits will be achieved at reasonable cost

Select ONE option.

Question #40 (1 Point)

Which of the following tools is most useful for reporting test metrics?

a) Test management tool
b) Static analysis tool
c) Coverage tool
d) Security tool

Select ONE option.

This exam should be completed in 60 minutes.

Question #1 (1pt)
What is the test basis?

a. The point during software development when testing should start
b. The body of knowledge used for test analysis and design
c. The source to determine the actual results from a set of tests
d. The method used to systematically devise test conditions

Question #2 (1 pt)

When the tester verifies the test basis while designing tests early in the lifecycle, which common test objective is being achieved?

a. Gaining confidence
b. Finding defects
c. Preventing defects
d. Providing information for decision making

Question #3 (1 pt)

When following the fundamental test process, when should the test control activity take place?

a. During the planning activities
b. During the implementation and execution activities
c. During the monitoring activities
d. During all the activities

Question #4 (1 pt)

Which of the following is a correct statement?

a. A developer makes a mistake which causes a defect that may be seen as a failure during dynamic testing
b. A developer makes an error which results in a failure that may be seen as a fault when the software is executed
c. A developer has introduced a failure which results in a defect that may be seen as a mistake during dynamic testing
d. A developer makes a mistake which causes a bug that may be seen as a defect when the software is executed

Question #5 (1 pt)

Which of the following is an example of debugging?

a. A tester finds a defect and reports it
b. A tester retests a fix from the developer and finds a regression

c. A developer finds and fixes a defect
d. A developer performs unit testing

Question #6 (1 pt)

Which of the following is a true statement about exhaustive testing?

a. It is a form of stress testing
b. It is not feasible except in the case of trivial software
c. It is commonly done with test automation
d. It is normally the responsibility of the developer during unit testing

Question #7 (1 pt)

A new retail product was released to production by your company. Shortly after the release it was apparent that there were numerous problems with the point of sale application. This resulted in a number of customer complaints and negative postings on social media encouraging people to take their business to your competitor. You have investigated the problems and have discovered that the production point of sale equipment is a later model than the model used in testing. The software functions correctly on the old version, but fails on the later model.

Given this scenario, what is the root cause and what is the effect?

a. The root cause is the old equipment and the effect is the new equipment
b. The root cause is the customer complaints and the effect is the social media postings
c. The root cause is conducting the testing on the wrong version of the equipment and the effect is the customer complaints and postings
d. The root cause is the software failing on the later model and the effect is the customer complaints

Question #8 (1 pt)

If you need to provide a report showing test case execution coverage of the requirements, what do you need to track?

a. Traceability between the test cases and the requirements
b. Coverage of the risk items by test case
c. Traceability between the requirements and the risk items
d. Coverage of the requirements by the test cases that have been designed

Question #9 (1 pt)

Which of the following is most correct regarding the test level at which functional tests may be executed?

a. Unit and integration
b. Integration and system

c. System and acceptance
d. All levels

Question #10 (1 pt)

Which of the following is a true statement regarding the V-model lifecycle?

a. Testing involvement starts when the code is complete
b. The test process is integrated with the development process
c. The software is built in increments and each increment has activities for requirements, design, build and test
d. All activities for development and test are completed sequentially

Question #11 (1 pt)

Usability testing is an example of which type of testing?

a. Functional
b. Non-functional
c. Structural
d. Change-related

Question #12 (1 pt)

What type of testing is normally conducted to verify that a product meets a particular regulatory requirement?

a. Unit testing
b. Integration testing
c. System testing
d. Acceptance testing

Question #13 (1pt)

You have been receiving daily builds from the developers. Even though they are documenting the fixes they are including in each build, you are finding that the fixes either aren't in the build or are not working. What type of testing is best suited for finding these issues?

a. Unit testing
b. System testing
c. Confirmation testing
d. Regression testing

Question #14 (1 pt)

In a formal review, which role is normally responsible for documenting all the open issues?

a. The facilitator
b. The author
c. The scribe
d. The manager

Question #15 (1 pt)

Which testing technique would be most effective in determining and improving the maintainability of the code (assuming developers fix what is found)?

a. Peer reviews
b. Static analysis
c. Dynamic testing
d. Unit testing

Question #16 (1 pt)

For a formal review, at what point in the process are the entry and exit criteria defined?

a. Planning
b. Review initiation
c. Individual review
d. Fixing and reporting

Question #17 (1 pt)

If the author of the code is leading a code review for other developers and testers, what type of review is it?

a. An informal development review
b. A walkthrough
c. An inspection
d. An audit

Question #18 (1 pt)

You are participating in a role-based review session. Your assigned role is that of a senior citizen. The product is an online banking application that is targeted for use on smart phones. You are currently reviewing the user interface of the product with a prototype that works on iPhones. Which of the following is an area that you should review?

a. The speed of response from the banking backend
b. The attractiveness of the application
c. The size and clarity of the instruction text
d. The reliability of the application when the connection is dropped

Question #19 (1 pt)

Which of the following is an extension of equivalence partitioning?

a. Decision tables
b. Decision testing
c. Boundary value analysis
d. State transition testing

Question #20 (1 pt)

If test cases are derived from looking at the code, what type of test design technique is being used?

a. Black-box
b. White-box
c. Specification-based
d. Behavior-based

Question #21 (1 pt)

Which of the following is a good reason to use experience-based testing?

a. You can find defects that might be missed by more formal techniques
b. You can test for defects that only experienced users would encounter
c. You can target the developer's efforts to the areas that users will be more likely to use
d. It is supported by strong tools and can be automated

Question #22 (1 pt)

If you are using error guessing to target your testing, which type of testing are you doing?

a. Specification-based
b. Structure-based
c. Experience-based
d. Reference-based

Question #23 (1 pt)

If you are testing a module of code, how do you determine the level of decision coverage you have achieved?

a. By taking the number of decisions you have tested and dividing that by the total number of executable statements in the module
b. By taking the number of decisions you have tested and dividing that by the total number of decisions in the module
c. By taking the number of decisions you have tested and dividing that by the total lines of code in the module
d. By taking the number of decision outcomes you have tested and dividing that by the total number of decision outcomes in the module

Question #24 (1 pt)

Which of the following best describes the behaviors defined in a use case that should be covered by tests?

a. Positive path and negative path
b. Basic, exception and error
c. Normal, error, data, and integration
d. Control flow, data flow and decision paths

Question #25 (1 pt)

You are testing a machine that scores exam papers and assigns grades. Based on the score achieved the grades are as follows: 1-49 = F, 50-59 = D-, 60-69 = D, 70-79 = C, 80-89 = B, 90-100=A
If you apply equivalence partitioning, how many test cases will you need to achieve minimum test coverage?

a. 6
b. 8
c. 10
d. 12

Question #26 (1 pt)

You are testing a machine that scores exam papers and assigns grades. Based on the score achieved the grades are as follows: 1-49 = F, 50-59 = D-, 60-69 = D, 70-79 = C, 80-89 = B, 90-100=A
If you apply two-value boundary value analysis, how many test cases will you need to achieve minimum test coverage?

a. 8
b. 10
c. 12
d. 14

Question #27 (1 pt)

You have been given the following conditions and results from those condition combinations. Given this information, using the decision table technique, what is the minimum number of test cases you would need to test these conditions?

Conditions:
Valid cash
Valid credit card
Valid debit card
Valid pin
Bank accepts
Valid Selection

Item in Stock
Results:
Reject Cash
Reject Card
Error Message
Return Cash
Refund Card
Sell Item

a. 7
b. 13
c. 15
d. 18

Question #28 (1 pt)

You have been given the following requirement:

A user must log in to the system with a valid username and password. If they fail to enter the correct combination three times, they will receive an error and will have to wait 10 minutes before trying again. The test terminates when the user successfully logs in.

How many test cases are needed to provide 100% state transition coverage?

a. 1
b. 2
c. 4
d. 5

Question #29 (1 pt)

You are testing a thermostat for a heating/air conditioning system. You have been given the following requirements:

- When the temperature is below 70 degrees, turn on the heating system
- When the temperature is above 75 degrees, turn on the air conditioning system
- When the temperature is between 70 and 75 degrees, inclusive, turn on fan only

Which of the following is the minimum set of test temperature values to achieve 100% two-value boundary value analysis coverage?

a. 70, 75
b. 65, 72, 80
c. 69, 70, 75, 76
d. 70, 71, 74, 75, 76

Question #30 (1 pt)

A metric that tracks the number of test cases executed is gathered during which activity in the test process?

a. Planning
b. Implementation
c. Execution
d. Reporting

Question #31 (1 pt)

Who is normally responsible for the creation and update of a test plan for a project?

a. The project manager
b. The test manager
c. The tester
d. The product owner

Question #32 (1 pt)

Which of the following variances should be explained in the Test Summary Report?

a. The variances between the weekly status reports and the test exit criteria
b. The variances between the defects found and the defects fixed
c. The variances between what was planned for testing and what was actually tested
d. The variances between the test cases executed and the total number of test cases

Question #33 (1 pt)

Which of the following is a project risk?

a. A module that performs incorrect calculations due to a defect in a formula
b. A failed performance test
c. An issue with the interface between the system under test and a peripheral device
d. A problem with the development manager which is resulting in his rejecting all defect reports

Question #34 (1 pt)

Which of the following is a benefit of test independence?

a. Testers have different biases than developers
b. Testers are isolated from the development team
c. Testers lack information about the test object
d. Testers will accept responsibility for quality

Question #35 (1 pt)

You are working in a team of testers who are all writing test cases. You have noticed that there is a

significant inconsistency with the length and amount of detail in the different test cases. Where should the test case guidelines have been documented?

a. The test plan
b. The test approach
c. The test case template
d. The project plan

Question #36 (1 pt)

Which of the following is an example of a good exit criterion from system testing?

a. All tests should be completed
b. The project budget should be spent
c. All defects should be fixed
d. All severity 1 defects must be resolved

Question #37 (1 pt)

You have received the following description section in a defect report:

The report executed per the attached steps, but the data was incorrect. For example, the information in column 1 was wrong. See the attached screenshot. This report is critical to the users and they will be unable to do their jobs without this information.

What is the biggest problem with this defect report?

a. The developer won't know how important the problem is
b. The developer won't know how to repeat the test
c. The developer won't be able to see what the tester is saying is wrong
d. The developer won't know what the tester expected to see

Question #38 (1 pt)

You have been given the following set of test cases to run. You have been instructed to run them in order by risk and to accomplish the testing as quickly as possible to provide feedback to the developers as soon as possible. Given this information, what is the best order in which to run these tests?

Test Case ID	Duration	Risk Priority	Dependency
1	30 mins	Low	6
2	10 mins	Medium	none
3	45 mins	High	1
4	30 mins	High	2
5	10 mins	Medium	4
6	15 mins	Low	2

a. 2, 4, 5, 6, 1, 3
b. 4, 3, 2, 5, 6, 1
c. 2, 5, 6, 4, 1, 3

d. 6, 1, 3, 2, 4, 5

Question #39 (1 pt)

Why is it important to define usage guidelines for a new tool?

a. Because this is a proven success factor in tool deployment
b. Because this will ensure the licensing restrictions are enforced
c. Because management needs to understand the details of the tool usage
d. Because this will provide the information needed for the cost/benefit analysis

Question #40 (1 pt)

Which of the following is an example of a tool that supports static testing?

a. A tool that assists with tracking the results of reviews
b. A defect tracking tool
c. A test automation tool
d. A tool that helps design test cases for security testing

This exam should be completed in 60 minutes.

Question #1 (1 pt)

Which of the following is the activity that removes the cause of a failure?

a. Testing
b. Dynamic testing
c. Debugging
d. Reverse engineering

Question #2 (1 pt)

As a tester, which of the following is a key to effectively communicating and maintaining positive relationships with developers when there is disagreement over the prioritization of a defect?

a. Escalate the issue to human resources and stress the importance of mutual respect
b. Communicate in a setting with senior management to ensure everyone understands
c. Convince the developer to accept the blame for the mistake
d. Remind them of the common goal of creating quality systems

Question #3 (1 pt)

Why is software testing sometimes required for legal reasons?

a. It prevents developers from suing testers
b. Contracts may specify testing requirements that must be fulfilled
c. International laws require software testing for exported products
d. Testing across systems must be accompanied by legal documentation

Question #4 (1 pt)

In what way does root cause analysis contribute to process improvement?

a. Helps to better identify and correct the root cause of defects
b. Outlines how development teams can code faster
c. Specifies the desired root causes to be achieved by other teams
d. Contributes to the justification of future project funding

Question #5 (1 pt)

Why is it important to avoid the pesticide paradox?

a. Dynamic testing is less reliable in finding bugs
b. Pesticides mixed with static testing can allow bugs to escape detection
c. Tests should not be context dependent
d. Running the same tests over and over will reduce the chance of finding new defects

Question #6 (1 pt)

Which of the following is the activity that compares the planned test progress to the actual test progress?

a. Test monitoring
b. Test planning
c. Test closure
d. Test control

Question #7 (1 pt)

Which of the following is the correct statement?

a. An error causes a failure which results in a defect
b. A defect causes a failure which results in an error
c. A failure is observed as an error and the root cause is the defect
d. An error causes a defect which is observed as a failure

Question #8 (1 pt)

What type of activity is normally used to find and fix a defect in the code?

a. Regression testing
b. Debugging
c. Dynamic analysis
d. Static analysis

Question #9 (1 pt)

During which level of testing should non-functional tests be executed?

a. Unit and integration only
b. System testing only
c. Integration, system and acceptance only
d. Unit, integration, system and acceptance only

Question #10 (1 pt)

When a system is targeted for decommissioning, what type of maintenance testing may be required?

a. Retirement testing
b. Regression testing
c. Data migration testing
d. Patch testing

Question #11 (1 pt)

If impact analysis indicates that the overall system could be significantly affected by system maintenance activities, why should regression testing be executed after the changes?

a. To ensure the system still functions as expected with no introduced issues
b. To ensure no unauthorized changes have been applied to the system
c. To assess the scope of maintenance performed on the system
d. To identify any maintainability issues with the code

Question #12 (1 pt)

In an iterative lifecycle model, which of the following is an accurate statement about testing activities?

a. For every development activity, there should be a corresponding testing activity
b. For every testing activity, appropriate documentation should be produced, versioned and stored
c. For every development activity resulting in code, there should be a testing activity to document test cases
d. For every testing activity, metrics should be recorded and posted to a metrics dashboard for all stakeholders

Question #13 (1 pt)

Use cases are a test basis for which level of testing?

a. Unit
b. System
c. Load and performance
d. Usability

Question #14 (1 pt)

Which of the following techniques is a form of static testing?

a. Error guessing
b. Automated regression testing
c. Providing inputs and examining the resulting outputs
d. Code review

Question #15 (1 pt)

Which of the following is a benefit of static analysis?

a. Defects can be identified that might not be caught by dynamic testing
b. Early defect identification requires less documentation
c. Early execution of the code provides a gauge of code quality
d. Tools are not needed because reviews are used instead of executing code

Question #16 (1 pt)

What is the main difference between static and dynamic testing?

a. Static testing is performed by developers; dynamic testing is performed by testers
b. Manual test cases are used for dynamic testing; automated tests are used for static testing
c. Static testing must be executed before dynamic testing
d. Dynamic testing requires executing the software; the software is not executed during static testing

Question #17 (1 pt)

If a review session is led by the author of the work product, what type of review is it?

a. Ad hoc
b. Walkthrough
c. Inspection
d. Audit

Question #18 (1 pt)

You are preparing for a review of a mobile application that will allow users to transfer money between bank accounts from different banks. Security is a concern with this application and the previous version of this application had numerous security vulnerabilities (some of which were found by hackers). It is very important that this doesn't happen again.

Given this information, what type of review technique would be most appropriate?

a. Ad hoc
b. Role-based
c. Checklist-based
d. Scenario

Question #19 (1 pt)

Which of the following is an experience-based testing technique?

a. Error guessing
b. Intuitive testing
c. Oracle-based testing
d. Exhaustive testing

Question #20 (1 pt)

Which of the following test techniques uses the requirements specifications as a test basis?

a. Structure-based
b. Black-box
c. White-box
d. Exploratory

Question #21 (1 pt)

How is statement coverage determined?

a. Number of test decision points divided by the number of test cases
b. Number of decision outcomes tested divided by the total number of executable statements
c. Number of possible test case outcomes divided by the total number of function points
d. Number of executable statements tested divided by the total number of executable statements

Question #22 (1 pt)

If you have a section of code that has one simple IF statement, how many tests will be needed to achieve 100% decision coverage?

a. 1
b. 2
c. 5
d. Unknown with this information

Question #23 (1 pt)

What is error guessing?

a. A testing technique used to guess where a developer is likely to have made a mistake
b. A technique used for assessing defect metrics
c. A development technique to verify that all error paths have been coded
d. A planning technique used to anticipate likely schedule variances due to faults

Question #24 (1 pt)

When exploratory testing is conducted using time-boxing and test charters, what is it called?

a. Schedule-based testing
b. Session-based testing
c. Risk-based testing
d. Formal chartering

Question #25 (1 pt)

You are testing a scale system that determines shipping rates for a regional web-based auto parts distributor. You want to group your test conditions to minimize the testing.

Identify how many equivalence classes are necessary for the following range. Weights are rounded to the nearest pound.

Weight	1 to 10 lbs.	11 to 25 lbs.	26 to 50 lbs.	51 lbs. and up
Shipping Cost	$5.00	$7.50	$12.00	$17.00

a. 8
b. 6
c. 5
d. 4

Question #26 (1 pt)

You are testing a scale system that determines shipping rates for a regional web-based auto parts distributor. Due to regulations, shipments cannot exceed 100 lbs. You want to include boundary value analysis as part of your black-box test design.

How many tests will you need to execute to achieve 100% two-value boundary value analysis?

Weight	0 to 10 lbs.	11 to 25 lbs.	26 to 50 lbs.	51 lbs. to 100
Shipping Cost	$5.00	$7.50	$12.00	$17.00

a. 4
b. 8
c. 10
d. 12

Question #27 (1 pt)

Which of the following is the correct decision table for the following pseudocode for ordering a hamburger? Note: if you add or delete items from the basic burger, you no longer get the basic burger.

```
Start
Select basic burger
If customer adds items
    While items to be added
            Ask customer which item
            Add item
    End while
Endif
If customer deletes items
    While items to be deleted
            Ask customer which item
```

```
            Delete item
        End while
    Endif
    If customer wants fries
        Add fries to order
    Endif
    Complete order
    End
```

a.

Test #	1	2	3	4	5	6
Conditions						
Add items	Y	Y	N	N	N	N
Delete items	N	N	Y	Y	N	N
Add fries	Y	N	Y	N	Y	N
Results						
Basic burger	Y	Y	N	N	Y	Y
Burger – items	N	N	Y	Y	N	N
Added items	Y	Y	N	N	N	N
Fries	N	N	Y	N	Y	N

b.

Test #	1	2	3	4	5	6	7	8
Conditions								
Add items	Y	Y	Y	Y	N	N	N	N
Delete items	Y	Y	N	N	Y	Y	N	N
Add fries	Y	N	Y	N	Y	N	Y	N
Results								
Basic burger	N	N	N	N	N	N	Y	Y
Deleted items	Y	Y	N	N	Y	Y	N	N
Added items	Y	Y	Y	Y	N	N	N	N
Fries	Y	N	Y	N	Y	N	Y	N

c.

Test #	1	2	3	4	5	6	7	8
Conditions								
Add items	Y	Y	Y	Y	N	N	N	N
Delete items	N	N	N	N	Y	Y	Y	Y
Add fries	Y	N	Y	N	Y	N	Y	N
Results								
Basic burger	Y	Y	Y	Y	N	N	N	N
Burger – items	N	N	N	N	Y	Y	Y	Y
Added items	Y	Y	Y	Y	N	N	N	N

Fries	Y	N	Y	N	Y	N	Y	N

d.

Test #	1	2	3	4	5	6	7	8
Conditions								
Add items	Y	Y	Y	Y	N	N	N	N
Delete items	Y	Y	N	N	Y	Y	N	N
Add fries	Y	N	Y	N	Y	N	Y	N
Results								
Basic burger	Y	Y	Y	Y	N	N	Y	Y
Burger – items	N	N	N	N	Y	Y	N	N
Added items	Y	Y	Y	Y	N	N	N	N
Fries	Y	N	Y	N	Y	N	Y	N

Question #28 (1 pt)

You are testing an e-commerce transaction that has the following states and transitions:

1. Login (invalid) > Login
2. Login > Search
3. Search > Search
4. Search > Shopping Cart
5. Shopping Cart > Search
6. Shopping Cart > Checkout
7. Checkout > Search
8. Checkout > Logout

For a state transition diagram, how many transitions should be shown?

a. 4
b. 6
c. 8
d. 16

Question #29 (1 pt)

You are testing a banking application that allows a customer to withdraw 20, 100 or 500 dollars in a single transaction. The values are chosen from a drop-down list and no other values may be entered. How many equivalence partitions need to be tested to achieve 100% equivalence partition coverage?

a. 1
b. 2
c. 3
d. 4

Question #30 (1 pt)

Level of risk is determined by which of the following?

a. Likelihood and impact
b. Priority and risk rating
c. Probability and practicality
d. Risk identification and mitigation

Question #31 (1 pt)

Who normally writes the test plan for a project?

a. The project manager
b. The product owner
c. The test manager
d. The tester

Question #32 (1 pt)

What is the biggest problem with a developer testing his own code?

a. Developers are not good testers
b. Developers are not quality focused
c. Developers are not objective about their own code
d. Developers do not have time to test their own code

Question #33 (1 pt)

Which of the following is a project risk?

a. A defect that is causing a performance issue
b. A duplicate requirement
c. An issue with a data conversion procedure
d. A schedule that requires work during Christmas shutdown

Question #34 (1 pt)

If your test strategy is based off the list of the ISO 25010 quality characteristics, what type of strategy is it?

a. Regulatory
b. Analytical
c. Methodical
d. Reactive

Question #35 (1 pt)

If the developers are releasing code for testing that is not version controlled, what process is missing?

a. Configuration management
b. Debugging
c. Test and defect management
d. Risk analysis

Question #36 (1 pt)

You are getting ready to test another upgrade of an ERP system. The previous upgrade was tested by your team and has been in production for several years. For this situation, which of the following is the most appropriate test effort estimation technique?

a. Effort-based
b. Expert-based
c. Metric-based
d. Schedule-based

Question #37 (1 pt)

You have been testing software that will be used to track credit card purchases. You have found a defect that causes the system to crash, but only if a person has made and voided 10 purchases in a row. What is the proper priority and severity rating for this defect?

a. Priority high, severity high
b. Priority high, severity low
c. Priority low, severity low
d. Priority low, severity high

Question #38 (1 pt)

Consider the following test cases that are used to test an accounting system:

Test ID	Name	Dependency	Priority
1	Purchase Item	none	2
2	Receive Invoice	Test 1	3
3	Receive Goods	Test 1	2
4	Send Payment	Test 2	3
5	Report Payments	Test 4	1

Given this information, what is the proper order in which to execute these test cases?

a. 5, 1, 3, 2, 4
b. 1, 2, 4, 5, 3

c. 1, 3, 2, 4, 5
d. 3, 4, 5, 1, 2

Question #39 (1 pt)

Which of the following are major objectives of a pilot project for a tool introduction?

a. Roll out, adapt, train, implement
b. Monitor, support, revise, implement
c. Learn, evaluate, decide, assess
d. Evaluate, adapt, monitor, support

Question #40 (1 pt)

What is the primary purpose of a test execution tool?

a. It runs automated test scripts to test the test object
b. It automatically records defects in the defect tracking system
c. It analyzes code to determine if there are any coding standard violations
d. It tracks test cases, defects and requirements traceability

1. Questions "Fundamentals"

Question 1 K2

Which of the following statements BEST describes one of the seven key principles of software testing?

Answer Set:

A Automated tests avoid exhaustive testing better than manual tests.
B With sufficient effort and tool support, exhaustive testing is feasible for all software.
C It is normally impossible to test all input/output combinations for a software system.
D The purpose of testing is to demonstrate the absence of defects.

Justification

a) WRONG – Exhaustive test is impossible, regardless of it being manual or automated.
b) WRONG – Exhaustive testing is impossible, regardless of the amount of effort put into testing (Principle # 2)
c) CORRECT – Principle #2 states: "Testing everything (all combinations of inputs and preconditions) is not feasible except for trivial cases"
d) WRONG – This statement is contradicting Principle #1: Testing shows presence of defects: Testing can show that defects are present, but cannot prove that there are no defects.

Question 2 K1

Which of the following statements is the MOST valid goal for a test team?

Answer Set:

A To determine whether enough component tests were executed within system testing.
B To detect as many failures as possible so that defects can be identified and corrected.
C To prove that all defects are identified.
D To prove that any remaining defect will not cause any failures.

Justification

a) WRONG – Component testing is not part of System testing.
b) CORRECT – This is the main role of a test team.
c) WRONG – Principle #1 states that exhaustive testing is impossible, so one can never prove that all defects were identified.
d) WRONG – To make an assessment whether a defect will cause a failure or not, one has to detect the defect first. Saying that no remaining defect will cause a failure, implicitly means that all defects were found. This contradicts Principle #1.

Question 3 K1

Which of these tasks would you expect to be performed during the Test Analysis and Design phase of the Fundamental Test Process?

Answer Set:

A Defining test objectives
B Reviewing the test basis
C Creating test suites from test procedures
D Analyzing lessons learned for process improvement

Justification

a) WRONG – this activity is performed during “Test Planning” phase (section 1.4.1)
b) CORRECT – this activity is performed during “Test Analysis and Design” phase (section 1.4.2)
c) WRONG – this activity is performed during “Test Implementation and Execution” phase (section 1.4.3)
d) WRONG – this activity is performed during “Test Closure Activities” phase (section 1.4.5)

Question 4 K2

Below is a list of problems that can be observed during testing or in production. Which of these problems is a failure?

Answer Set:

A The product crashed when the user selected an option in a dialog box.

B One source code file included in the build has the wrong version.

C The computation algorithm used wrong input variables.

D The developer misinterpreted the requirement for the algorithm.

Justification

a) CORRECT – A failure is an external manifestation of a defect. A crash is clearly noticeable by user

b) WRONG – This type of mistake will not necessarily lead to a visible or noticeable failure. For example: if the changes in the new version of the source file are only in the comments.

c) WRONG – Use of a wrong input variable will not necessarily lead to a visible or noticeable failure. For example: if no one uses this specific algorithm; or: if the wrongly used input variable had a similar value as the correct input variable; or: if no one is using the wrong result from the algorithm. “Defects in software, systems or documents may result in failures, but not all defects do so.” (Section 1.1.2)

d) WRONG – This type of mistake will not necessarily lead to a visible or noticeable failure. For example: if no one uses this specific algorithm.

Question 5 K1

Which of the following attitudes, qualifications or actions would lead to problems (or conflict) within mixed teams of testers and developers, when observed in reviews and tests?

Answer Set:

A Testers and developers are curious and focused on finding defects.

B Testers and developers are sufficiently qualified to find failures and defects.

C Testers and developers communicate defects as criticism of people, not as criticism of the software product.

D Testers expect that there might be defects in the software product which the developers have not found and fixed.

Justification

a) WRONG. There is no situation which leads to conflict. Testers and developers should be focused on finding defects

b) WRONG. Testers and developers should be sufficiently qualified to find failures and defects

c) CORRECT. According to the syllabus, testers and developers should cooperate, and communicating defects as criticism of people would lead to conflict inside the team

d) WRONG. The tester's role in the team is finding defects in the software product that the developers have not found and fixed.

Question 6 K2

Which of the following statements are TRUE?

A. Software testing may be required to meet legal or contractual requirements.
B. Software testing is mainly needed to improve the quality of the product released by the developers.
C. Rigorous testing and fixing of found defects could help reduce the risk of problems occurring in an operational environment.
D. Rigorous testing is sometimes used to prove that all failures have been found.

Answer Set:

A A, B and C are true; D is false

B A is true; B, C, and D are false

C A and C are true; B and D are false

D C and D are true; A and B are false

Justification

A. CORRECT. Software testing may be required to meet legal or contractual requirements.

B. CORRECT. Software testing is mainly needed to improve the quality of the product released by the developers.

C. CORRECT. One of the main aims of software testing is to reduce the risk of problems occurring in an operational environment.

D. WRONG. It is impossible to prove that all failures have been found.

Hence

a) CORRECT
b) WRONG
c) WRONG
d) WRONG

Question 7 K2

Which of the following statements correctly describes the difference between testing and debugging?

Answer Set:

A Testing identifies the source of defects; debugging analyzes the faults and proposes prevention activities.

B Dynamic testing shows failures caused by defects; debugging finds, analyzes, and removes the causes of failures in the software.

C Testing removes faults; debugging identifies the causes of failures.

D Dynamic testing prevents the causes of failures; debugging removes the failures.

Justification

a) WRONG. Testing does not identify the source of defects

b) CORRECT. Dynamic testing shows failures caused by defects; debugging finds, analyzes, and removes the causes of failures in the software

c) WRONG. Testing does not remove faults

d) WRONG. Dynamic testing does not prevent the causes of failures

2. Questions “Testing throughout the software life-cycle”

Question 8 K1

Which of the following statements BEST describes non-functional testing?

Answer Set:

A Non-functional testing is the process of testing an integrated system to verify that it meets specified requirements.

B Non-functional testing is the process of testing to determine system compliance with coding standards.

C Non-functional testing is testing without reference to the internal structure of a system.

D Non-functional testing is testing system attributes, such as usability, reliability, or maintainability.

Justification

a) WRONG, this is a definition of system testing

b) WRONG, this is a function of white box testing

c) WRONG, it is a definition of black box testing

d) CORRECT, testing system attributes, such as usability, reliability, or maintainability is non-functional testing

Question 9 K2

When working with software development models, what is it important to do?

Answer Set:

A If needed, adapt the models to project and product characteristics.
B Choose the waterfall model, because it is the most proven model.
C Start with the V-model, and then move to either the iterative or the incremental model.
D Change the organization to fit the model, not vice versa.

Justification

a) CORRECT – Models provide general guidelines – not an accurate and step-by-step process that has to be followed to the letter.

b) WRONG – The waterfall is only one of the possible models a team can choose to follow.

c) WRONG – The V-model is not compatible with iterative models. So the described flow does not make sense.

d) WRONG – Models are chosen to fit the situation and project and not vice versa

Question 10 K1

Which of the following is a characteristic of good testing and applies to any software development life cycle model?

Answer Set:

A Acceptance testing is always the final test level to be applied.
B All test levels are planned and completed for each developed feature.
C Testers are involved as soon as the first piece of code can be executed.
D For every development activity there is a corresponding testing activity.

a) WRONG – This is correct only for projects that have acceptance tests. Some projects do not have this test level.

b) WRONG – There are cases where some test levels are not necessarily needed. For example: when getting code from 3rd party, component testing is not needed.

c) WRONG – Testers should be involved much earlier then when the code is available. For example, testers should be involved in requirements specification reviews.

d) CORRECT – “In any life cycle model, there are several characteristics of good testing: For every development activity there is a corresponding testing activity.” (Section 2.1.3)

Question 11 K1

Which of the following is an example of maintenance testing?

Answer Set:

A To test corrected defects during development of a new system.
B To test enhancements to an existing operational system.
C To handle complaints about system quality during user acceptance testing.
D To integrate functions during the development of a new system.

Justification

a) WRONG – Testing a new system is not “maintenance testing”

b) CORRECT – testing the system’s ability to perform after an environment change is considered “maintenance testing”.

c) WRONG – Dealing with Acceptance Test failures is not “maintenance testing”

d) WRONG – Integration of functions is not a testing activity

Question 12 K2

Which of the following statements are TRUE?

A. Regression testing and re-testing are the same.
B. Regression tests show if all failures have been resolved.
C. Regression tests are good candidates for test automation.
D. Regression tests are performed to uncover defects as a result of changes in the program.
E. Regression tests should not be performed during integration testing.

Answer Set:

A A and B are true
B A, C and E are true
C C and D are true
D B, D, and E are true

Justification

Sentence A is incorrect – **Regression testing** is the repeated testing of an already tested program, after modification, to discover any defects introduced or uncovered as a result of the change(s). **Re-test** is done to confirm that a defect has been successfully removed. (Section 2.3.4).

Sentence B is incorrect – The sentence describes “Re-test”.

Sentence C is correct - Regression test suites are run many times and generally evolve slowly, so regression testing is a strong candidate for automation. (Section 2.3.4)

Sentence D is correct – This is the definition of regression tests. See Section 2.3.4.

Sentence E is incorrect – “Regression testing may be performed at all test levels, and includes functional, non-functional and structural testing.” (Section 2.3.4)

Hence

a) WRONG

b) WRONG

c) CORRECT

d) WRONG

Question 13 K2

Which of the following statements comparing component testing and system testing is TRUE?

Answer Set:

A Component testing verifies the functionality of software modules, program objects, and classes that are separately testable, whereas system testing verifies interfaces between components and interactions between different parts of the system.

B Test cases for component testing are usually derived from component specifications, design specifications, or data models, whereas test cases for system testing are usually derived from requirement specifications, functional specifications, or use cases.

C Component testing only focuses on functional characteristics, whereas system testing focuses on functional and non-functional characteristics.

D Component testing is the responsibility of the testers, whereas system testing typically is the responsibility of the users of the system.

Justification

a) WRONG. System testing does not test interfaces between components and interactions between different parts of the system; it is a target of integration tests.

b) CORRECT.

c) WRONG, Component testing does not ONLY focus on functional characteristics

d) WRONG, Component testing typically is the responsibility of the developers, whereas system testing typically is the responsibility of testers

3. Questions “Static techniques”

Question 14 K1

Which of the following describes the main phases of a formal review?

Answer Set:

A Initiation, status, individual preparation, review meeting, rework, follow up

B Planning, individual preparation, review meeting, rework, closure, follow up

C Planning, kick off, individual preparation, review meeting, rework, follow up

D Individual preparation, review meeting, rework, closure, follow up, root cause analysis

Justification

The main phases of a formal review are planning, kick off, individual preparation, review meeting, rework, follow up, hence

a) WRONG

b) WRONG

c) CORRECT

d) WRONG

Question 15 K2

Which of the review types below is the BEST option to choose for reviewing safety critical components in a software project?

Answer Set:

A Informal Review
B Peer Review
C Inspection
D Walkthrough

Justification

For reviewing safety critical components in a software project a more formal, documented review is needed, hence

a) WRONG

b) WRONG

c) CORRECT

d) WRONG

Question 16 K1

Which of the following statements about tool-supported static analysis is FALSE?

Answer Set:

A Tool-supported static analysis can be used as a preventive measure with appropriate processes in place.

B Tool-supported static analysis can find defects that are not easily found by dynamic testing.

C Tool-supported static analysis can result in cost savings by finding defects early.

D Tool-supported static analysis is a good way to force failures into the software.

Justification:

a) WRONG. This sentence is true, tool-supported static analysis can be used as a preventive measure.

b) WRONG. This sentence is true, tool-supported static analysis can find defects that are not found by dynamic testing

c) WRONG. This sentence is true, tool-supported static analysis is a cost saving method used to find defects early

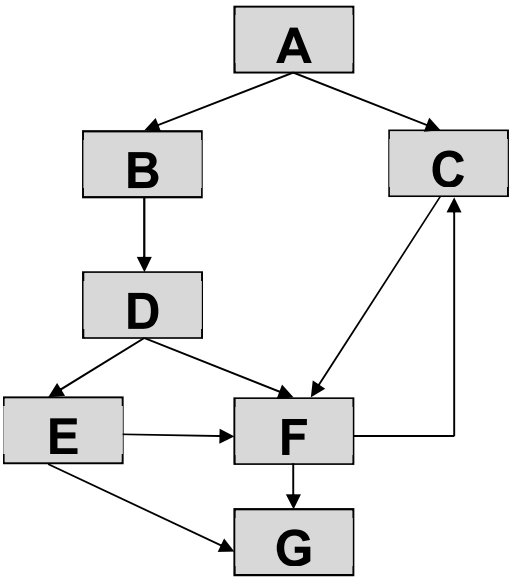
d) CORRECT. During static analysis no failures are found, because the code is not running

4. Questions "Test design techniques"

Question 17 K4

One of the test goals for your project is to have 100% decision coverage. The following three tests have been executed for the control flow graph shown below.

Test A covers path: A, B, D, E, G
Test B covers path: A, B, D, E, F, G
Test C covers path: A, C, F, C, F, C, F, G



Which of the following statements related to the decision coverage goal is TRUE?

Answer Set:

A Decision D has not been tested completely.

B 100% decision coverage has been achieved.

C Decision E has not been tested completely.

D Decision F has not been tested completely.

Justification:

In the diagram there are following four conditions: A, D, E. F
The test A covers A->B, D->E and E->G
The test B covers A->B, D->E, E->F and F->G
The test C covers A->C, F->C and F->G.
Hence condition A is covered (A->B and A->C), condition E is covered (E->G and E->F), condition F is covered (F->C and F->G). Condition D is not covered, there is only D->E and D->F is not covered. Hence

a) CORRECT

b) WRONG
c) WRONG
d) WRONG

Question 18 K3

A defect was found during testing:

While receiving customer data from a server the system crashed. The defect was fixed by correcting the code that checked the network availability during data transfer. The existing test cases covered 100% of all statements of the corresponding module. To verify the fix and to ensure more extensive coverage, some new tests were designed and added to the test suite and executed.

What types of testing are described above?

A. Functional testing
B. Structural testing
C. Re-testing
D. Performance testing

Answer Set:

A A and B, but not C and D
B A and C, but not B and D
C A, B, and C, but not D
D B, C, and D, but not A

Justification:

A. is true. Receiving customer data is typical functional testing
B. is true. In the problem description it was stated, "*The existing test cases covered 100% of all statements of the corresponding module*"; statement testing is structural testing
C. is true. In the problem description it was stated, "*To verify the fix and to ensure more extensive coverage, some new tests were designed and added to the test suite and executed*", so this is a retest.
D. is false. In the problem description there is no information about performance testing.

Hence

a) WRONG

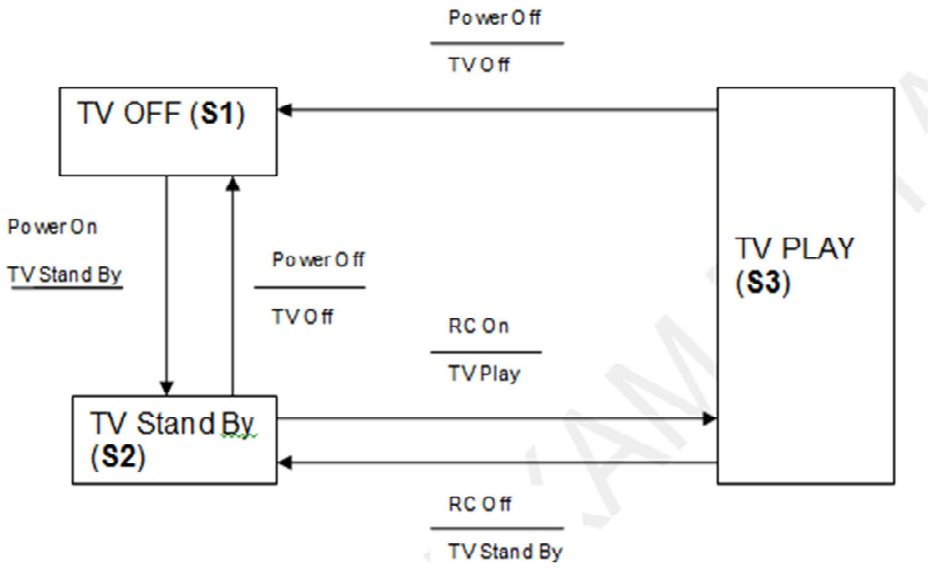
b) WRONG

c) CORRECT

d) WRONG

Question 19 K3

Which of the following statements about the given state transition diagram and table of test cases is TRUE?



Test Case	1	2	3	4	5
Start State	S1	S2	S2	S3	S3
Input	Power On	Power Off	RC On	RC Off	Power Off
Expected Output	TV Stand By	TV Off	TV Play	TV Stand By	TV Off
Final State	S2	S1	S3	S2	S1

Answer Set:

A The given test cases can be used to derive both valid and invalid transitions in the state transition diagram.

B The given test cases represent all possible valid transitions in the state transition diagram.

C The given test cases represent only some of the valid transitions in the state transition diagram.

D The given test cases represent sequential pairs of transitions in the state transition diagram.

Justification:

Proposed test cased covered all five possible single valid transitions in the given state diagram (S1->S2, S2->S1, S2->S3, S3->S2, S3->S1).

Hence

a) WRONG
b) CORRECT
c) WRONG
d) WRONG

Question 20 K2

Which of the following statements for the equivalence partitioning test technique are TRUE?

Equivalence partition testing …

A. divides possible inputs into classes where all elements are expected to cause the same behavior.
B. uses both valid and invalid partitions.
C. must include at least two values from every equivalence partition.
D. can be used only for testing equivalence partition inputs from a Graphical User Interface.

Answer Set:

A A, B, and D are true; C is false

B A is true; B, C and D are false

C B and C are true; A and D are false

D A and B are true; C and D are false

Justification:

Equivalence partitions divide possible inputs into classes where all elements are expected to cause the same behavior and uses both valid and invalid partitions. What more it is enough to use one value from each class. Introducing input from GUI is possible, but is not the best method. Hence

A. Is true
B. Is true
C. Is false
D. Is false

Hence

a) WRONG

b) WRONG

c) WRONG

d) CORRECT

Question 21 K1

Which of the following options lists techniques categorized as Black Box design techniques?

Answer Set:

A Equivalence Partitioning, Decision Table testing, State Transition testing, and Boundary Value analysis

B Equivalence Partitioning, Decision Table testing, Statement coverage, Use Case Based testing

C Equivalence Partitioning, Decision Coverage testing, Use Case Based testing

D Equivalence Partitioning, Decision Coverage testing, Boundary Value analysis

Justification

a) CORRECT – all four are black box tests techniques. See section 4.3.

b) WRONG – Statement Coverage is a white box test technique

c) WRONG – Decision Coverage is a white box test technique

d) WRONG – Decision Coverage is a white box test technique

Question 22 K3

An employee's bonus is to be calculated. It cannot be negative, but it can be calculated down to zero. The bonus is based on the length of employment. The categories are: less than or equal to 2 years, more than 2 years but less than 5 years, 5 or more years, but less than10 years, 10 years or longer. Depending on the length of employment, an employee will get different levels of bonus.

How many valid equivalence partitions are needed to test the calculation of the bonus?

Answer Set:

A 3
B 5
C 2
D 4

Justification

a) WRONG – see the correct partitions in (d)

b) WRONG – see the correct partitions in (d)

c) WRONG – see the correct partitions in (d)

d) CORRECT. The partitions follow the description in the question:

0 < employment time ≤ 2
2 < employment time < 5
5 ≤ employment time < 10
10 ≤ employment time

Question 23 K3

Which of the following statements about the benefits of deriving test cases from use cases are true and which are false?

A. Deriving test cases from use cases is helpful for system and acceptance testing.
B. Deriving test cases from use cases is helpful only for automated testing.
C. Deriving test cases from use cases is helpful for component testing.
D. Deriving test cases from use cases is helpful for integration testing.

Answer Set:

A A and D are true; B and C are false

B A is true; B, C, and D are false

C B and D are true; A and C are false

D A, C, and D are true; B is false

Justification

Sentence A is CORRECT – Use cases describe how users interact with the completed system, therefore are best fitted for defining system-level tests. Additionally, “Use cases are very useful for designing acceptance tests with customer/user participation.” (Section 4.3.5)

Sentence B is WRONG – Use cases can be executed manually, not just automatically.

Sentence C is WRONG – at the component level we derive test cases to increase code coverage. These are derived mostly by looking at the code, not by definition of a use case which will eventually exercise a certain piece of the code.

Sentence D is CORRECT – “[use cases] also help uncover integration defects caused by the interaction and interference of different components” (Section 4.3.5)

Hence

a) CORRECT

b) WRONG

c) WRONG

d) WRONG

Question 24 K2

Which of the options below would be the BEST basis for testing using fault attacks?

Answer Set:

A Experience, defect and failure data; knowledge about software failures
B Risk identification performed at the beginning of the project
C Use Cases derived from business flows by domain experts
D Expected results from comparison with an existing system

Justification

a) CORRECT – "These defect and failure lists can be built based on experience, available defect and failure data, and from common knowledge about why software fails." (Section 4.5)

b) WRONG – Risk identification tags the areas or features of concern in the project – not how to test them.

c) WRONG – Testing business flows is not targeted at known weaknesses in software. It just attempts to verify certain use cases can be executed.

d) WRONG – The sentence describes one of the possible ways to know if a test failed or not and has nothing specific to do with fault-attacks.

Question 25 K1

You are working on a project that has poor specifications and time pressure.

Which of the following test techniques would be the best test approach to use?

Answer Set:

A Use Case Testing
B Statement Testing
C Exploratory Testing
D Decision Testing

Justification:

a) WRONG, the project has poor specifications, hence there is only a small possibility that any use cases exist

b) WRONG, statement testing is time consuming, and there is time pressure in the project

c) CORRECT, exploratory testing is a good idea when there is poor documentation and time pressure

d) WRONG, decision testing is time consuming, and there is time pressure in the project

Question 26 K1

Which of the following test techniques is a white-box technique?

Answer Set:

A Decision Testing

B Boundary Value Analysis

C Equivalence Partitioning

D State Transition Testing

Justification:

a) CORRECT, decision testing is a white box technique

b) WRONG, BVA is black- box technique

c) WRONG, Equivalence partitioning is black-box technique

d) WRONG, State Transition testing is black-box technique

Question 27 K3

You have started specification-based software testing. The system under test calculates the greatest common divisor (GCD) of two integers (A and B) greater than zero. [K3]

calcGCD (A, B);

The following test inputs have been specified.

Test Case	A	B
1	1	1
2	INT_MAX	INT_MAX
3	1	0
4	0	1
5	INT_MAX-1	1
6	1	INT_MAX-1

Where INT_MAX is the largest Integer.

Which test technique has been applied in order to determine test cases 1 through 6?

Answer Set:

A Boundary Value Analysis
B State Transition Testing
C Use Case Testing
D Decision Table Testing

Justification:

a) CORRECT: given values (0,1,INT_MAX -1, INT_MAX) are typical border values

b) WRONG, see a) for justification

c) WRONG, see a) for justification

d) WRONG, see a) for justification

Question 28 K3

A company's employees are paid bonuses if they work more than a year in the company and achieve individually agreed targets.

The following decision table has been designed to test the system:

		T1	T2	T3	T4	T5	T6	T7	T8
Conditions									
Cond1	Employment for more than 1 year?	YES	NO	YES	NO	YES	NO	YES	NO
Cond2	Agreed target?	NO	NO	YES	YES	NO	NO	YES	YES
Cond3	Achieved target?	NO	NO	NO	NO	YES	YES	YES	YES
Action									
	Bonus payment?	NO	NO	NO	NO	NO	NO	YES	NO

Which test cases could be eliminated in the above decision table because the test case wouldn't occur in a real situation?

Answer Set:

A T1 and T2
B T3 and T4
C T7 and T8
D T5 and T6

Justification:

In the test cases one should infer from the conditions. In the test cases T5 and T6 the situation is described, where the target is reached, however, was not agreed. Since this situation can´t occur, therefore we can eliminate the corresponding test cases.
Hence

a) WRONG

b) WRONG

c) WRONG

d) CORRECT

5. Questions "Test management"

Question 29 K1

Which of the following BEST describes how tasks are divided between the test manager and the tester?

Answer Set:

A The test manager plans testing activities and chooses the standards to be followed, while the tester chooses the tools and controls to be used.

B The test manager plans, organizes, and controls the testing activities, while the tester specifies and executes tests.

C The test manager plans, monitors, and controls the testing activities, while the tester designs tests and decides about the approval of the test object.

D The test manager plans and organizes the testing, and specifies the test cases, while the tester prioritizes and executes the tests.

Justification

a) WRONG – Selecting tools is a test manager's task (Section 5.1.2)

b) CORRECT – see section 5.1.2

c) WRONG – Deciding about approval of the test object is a test manager's task

d) WRONG – Test manager does not specify the test cases

Question 30 K2

Which of the following can be categorized as a product risk?

Answer Set:

A Low quality of requirements, design, code and tests.

B Political problems, and delays in especially complex areas in the product.

C Error-prone areas, potential harm to the user, poor product characteristics.

D Problems in defining the right requirements, potential failure areas in the software or system.

Justification

a) WRONG – Low quality requirements are a program risk (See Syllabi Section 5.5.1)

b) WRONG – All the items in this option are program risks

c) CORRECT – all items are product risks (See Syllabi Section 5.5.2)

d) WRONG – Requirements problems are program risk. (See Syllabi Section 5.5.1)

Question 31 K2

Which of the following are typical exit criteria from testing?

Answer Set:

A Test coverage measures, reliability measures, test cost, schedule, state of defect correction and residual risks

B Test coverage measures, reliability measures, degree of tester independence, and product completeness

C Test coverage measures, reliability measures, test cost, availability of testable code, time to market, and product completeness

D Time to market, residual defects, tester qualification, degree of tester independence, test coverage measures and test cost

Justification

a) CORRECT – See section 5.2.4

b) WRONG – Degree of tester's independence does not play a role in exit criteria

c) WRONG – "availability of testable code" is an entry criteria

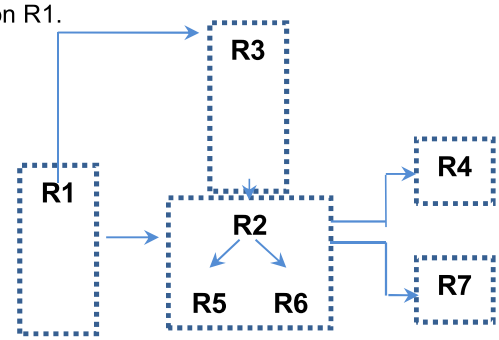
d) WRONG – Degree of tester's independence as well as tester qualification do not play a role in exit criteria

Question 32 K3

As a Test Manager, you have the following requirements to test:

R1 – Process Anomalies
R2 – Synchronization
R3 – Confirmation
R4 – Issues
R5 – Financial Data
R6 – Diagram Data
R7 – Changes to the User Profile

The notation to indicate any Requirement's logical dependencies is, for example, "R1 -> R3" meaning that R3 is dependent on R1.



Which of the following options structures the test execution schedule according to the requirement dependencies?

Answer Set:

A R3 -> R2 -> R1 -> R7 -> R5 -> R6 -> R4
B R2 -> R5 -> R6 -> R4 -> R7 -> R1 -> R3
C R1 -> R3 -> R2 -> R5 -> R6 -> R4 -> R7
D R1 -> R2 -> R5 -> R6 -> R3 -> R4-> R7

Justification

a) WRONG – everything is dependent on R1, so any test flow that does not start with R1 is wrong.

b) WRONG – everything is dependent on R1, so any test flow that does not start with R1 is wrong.

c) CORRECT – the tests are specified in a cadence that takes the dependencies into account

d) WRONG – R2 is dependent on R3, so R3 should be tested before R2.

Question 33 K1

Which of the following is a possible benefit of independent testing?

Answer Set:

A More work gets done because testers do not disturb the developers all the time.
B Independent testers tend to be unbiased and find different defects than the developers.
C Independent testers do not need extra education and training.
D Independent testers reduce the bottleneck in the incident management process.

Justification:

a) WRONG – independence does not mean loss of cooperation

b) CORRECT – that is one of the reasons for independence

c) WRONG – testers need education and training

d) WRONG – there is no connection between Independent testers and the bottleneck in the incident management process.

Question 34 K1

Which of the following is a project risk?

Answer Set:

A Skill and staff shortages
B Poor software characteristics (e.g. usability)
C Failure-prone software delivered
D Possible reliability defect (bug)

Justification:

a) CORRECT - skill and staff shortages is typical project risk

b) WRONG - it is a product risk

c) WRONG- it is a product risk

d) WRONG - it is a product risk

Question 35 K2

As a test manager, you are asked for a test summary report. Concerning test activities, and according to the IEEE 829 Standard, what should be the MOST important information to include in your report?

Answer Set:

A The number of test cases executed and their results.

B An overview of the major testing activities, events and the status with respect to meeting goals

C Overall evaluation of each development work item

D Training taken by members of the test team to support the test effort

Justification:

a) WRONG - the number of test cases executed and their results may be included in a test summary report according to IEEE 829, but not as the most important part

b) CORRECT – the test summary report must include information about the major testing activities, events and the status with respect to meeting goals.

c) WRONG - evaluation of each development work item is not the part of test summary report

d) WRONG –training is not relevant in a test summary report

Question 36 K3

You are a tester in a safety-critical software development project. During execution of a test, you find out that one of your test cases failed, causing you to write an incident report.

According to the IEEE Std. 829, what should you consider to be the MOST important information to include in your incident report?

Answer Set:

A Impact, incident description, date and your name

B Unique ID for the report, special requirements needed and the person who caused the defect

C Transmitted items, your name and your feelings about the possible root cause of the defect

D Incident description, development environment and expected results of testing

Justification:

a) CORRECT – the most important information that should be included in an incident report for critical software is impact

b) WRONG – this information should be in incident report but this information isn't as important as impact; see a).

c) WRONG – see a), an incident report should contain factual information, not the tester's 'feeling' about the possible root cause

d) WRONG – this information should be in incident report but this information isn't as important as impact; see a).

6. Questions "Test tools"

Question 37 K1

From the list below, which are the recommended principles for introducing a test tool to an organization?

1. Roll out the tool to the entire organization at the same time
2. Start with a pilot project
3. Adapt and improve processes to fit the use of the tool
4. Provide training and coaching for new users
5. Let each team decide their own way of using the tool
6. Monitor that costs do not exceed initial acquisition cost
7. Gather lessons learned from all teams

Select ONE option.

Answer Set:

A 1, 3, 4, 5

B 2, 5, 6

C 2, 3, 4, 7

D 1, 6, 7

Justification

Sentence 1 is **incorrect** – It is recommended to first do a pilot deployment, before rolling out to the entire organization (Section 6.3)
Sentence 2 is **correct** – See above
Sentence 3 is **correct** – "Evaluate how the tool fits with existing processes and practices, and determine what would need to change" (Section 6.3)
Sentence 4 is **correct** – Provision of training is one of the success factors for deployment (Section 6.3)
Sentence 5 is **incorrect** – If you let everyone to decide how to use the tool, there will be a mess. "Defining usage guidelines" is one of the success factors for deployment (Section 6.3)
Sentence 6 is **incorrect** - The cost of deploying a tool is more than just the acquisition cost of the tool. Failing to realize this is one of the risks associated with tool deployment (Section 6.1)
Sentence 7 is **correct** - "Gathering lessons learned from all teams" is one of the success factors for deployment (Section 6.3)

Hence

a) WRONG

b) WRONG

c) CORRECT

d) WRONG

Question 38 K1

Which of the following BEST describes a characteristic of a keyword-driven test execution tool?

Answer Set:

A A table with test input data, action words, and expected results controls execution of the system under test

B Actions of testers are automated using a script that is rerun several times.

C Actions of testers are automated using a script that is run with several sets of test input data.

D The ability to log test results, and compare them against the expected results stored in a text file

Justification

a) CORRECT – "In a keyword-driven testing approach, the spreadsheet contains keywords describing the actions to be taken (also called action words), and test data" (Section 6.2.3)

b) WRONG – this is a description of scripted test automation

c) WRONG – this is a description of data-driven test automation

d) WRONG – this is describing a part of what a test automation framework does

Question 39 K1

Which of the following is NOT a goal of a pilot project for tool evaluation?

Answer Set:

A To evaluate how the tool fits with existing processes and practices

B To determine use, management, storage, and maintenance of the tool and testware

C To assess whether the benefits will be achieved at reasonable cost

D To reduce the defect rate in the pilot project

Justification

a) WRONG – the sentence is true, see Syllabi, section 6.3

b) WRONG – the sentence is true, see Syllabi, section 6.3

c) WRONG -- the sentence is true, see Syllabi, section 6.3

d) CORRECT – reducing the number of defects is not the goal of a pilot project

Question 40 K2

A software development and test organization would like to achieve the test efficiency improvement goals listed below.

Which would best be supported by a test management tool?

Answer Set:

A Enable traceability between requirements, tests, and defects (bugs)

B Optimize the ability of tests to identify failures

C Resolve defects faster

D Automate a selection of test cases for execution

Justification

a) CORRECT – because traceability between requirements and testing is a functionality of a test management tool

b) WRONG – because this is not possible with test management tools

c) WRONG -- because this is not mainly solved by test management tools

d) WRONG – because the selection of test cases is not supported by test management tools

#1. Which of the following is the best example of a defect that causes harm?

a. A usability defect that results in user dissatisfaction
b. A defect that causes slow response time when running reports
c. A defect that causes raw sewage to be dumped into the ocean
d. A regression defect that causes the desktop window to display in green

#2. Which of the following will help prevent defects from reoccurring?

a. Rotating developers to keep them motivated
b. Determining the environmental conditions that caused the failure
c. Improving processes based on root cause analysis
d. Prioritizing reoccurring defects higher than new defects

#3. Which testing level is primarily focused on building confidence rather than finding defects?

a. Unit testing
b. Integration testing
c. System testing
d. Acceptance testing

#4. Which characteristic must a tester possess in order to be successful when working with a project team?

a. Constructive communication skills
b. Authoritarian leadership style
c. Extroverted personality
d. Extensive organizational network

#5. If you need to add system integration testing as a test level for a particular project, what testing level should it directly follow?

a. Component
b. Component integration
c. System
d. Acceptance

#6. In which testing level are the developers most heavily involved?

a. Compatibility
b. Acceptance
c. Component
d. Conversion

#7. If you are testing to ensure that the software will be easy to analyze and change, what type of non-functional testing are you conducting?

a. Portability
b. Functional
c. Usability
d. Maintainability

#8. Which of the following is an important characteristic of tests used for regression testing?

a. They focus on testing the intricate and difficult-to-test aspects of the software
b. They require significant maintenance effort for each release
c. They are used for one release and are then discarded to keep the test set fresh
d. They are reusable for multiple releases with little maintenance

#9. Which of the following is a trigger for maintenance testing?

a. A new software product is being developed and defects have been found in unit testing
b. A new software product is being developed and will work across multiple platforms
c. A component of an existing production software product has been removed
d. A component of an existing production software product has received high usage

#10. Which of the following is an effective method for finding defects early in the software lifecycle?

a. Static analysis
b. System testing
c. User acceptance testing
d. Implementation validation testing

#11. If a review is being led by the author of the document, what type of review is it?

a. Inspection
b. Technical review
c. Walkthrough
d. Informal

#12. Which of the following is a key factor in the success of a work product review?

a. Limit the number of defects found
b. Define the objectives
c. Couple it to performance reviews
d. Open invitation

#13. When should the expected results of a test case be defined?

a. When the test case is written, prior to execution
b. When the test case is executed
c. When the risk is assessed
d. When the test condition is identified

#14. Which of the following black-box testing techniques focuses on covering all combinations of triggering conditions?

a. State transition testing
b. Equivalence partitioning
c. Boundary value analysis
d. Decision table testing

#15. What do use cases describe?

a. Process flows
b. Data flows
c. Control flows
d. Code flows

#16. If you are using a testing technique to identify test cases that were missed when you applied formal testing techniques, what type of test design are you doing?

a. Experience-based
b. Informal
c. Defect-based
d. Ad hoc

#17. If you need to attain a certain level of code coverage for a particular software product your team is testing, what type of testing should you use?

a. Specification-based
b. Structure-based
c. Experience-based
d. Defect-based

#18. Which of the following tasks is most typical for a tester

a. Coordinate the testing strategy with project managers
b. Determine what tests should be automated
c. Acquire and prepare data to be used for testing
d. Use test results to guide future planning

#19. At what point in the project should the test execution be scheduled?

a. During test planning
b. During test analysis and design
c. During test implementation
d. During test execution

#20. Which of the following should include the scheduling of test analysis?

a. Test approach
b. Test strategy
c. Test planning
d. Test estimation

#21. If the project is using highly skilled and experienced developers, what is affected by this factor?

a. The test strategy
b. The test estimate
c. The test reporting
d. The test automation

#22. Which of the following test estimation approaches is based on typical values?

a. Risk-based
b. Value-based
c. Expert-based
d. Metrics-based

#23. For what level of testing is the following criterion appropriate? No priority 1, 2, or 3 defects are open and all priority 4 defects must have a documented workaround and are accepted by the business.

a. Exit from unit testing
b. Entrance to integration testing
c. Exit from integration testing
d. Exit from system testing

#24. If you want to track all changes to versions of your testware, what should you implement?

a. Tracker control
b. Configuration management
c. Test control
d. Test reporting

#25. Which of the following is a risk that could threaten the project's objectives?

a. The software fails to detect the selection of an invalid workflow path by a user with restricted rights
b. A data conversion is failing because of an unexpected data format
c. The test environment is not ready
d. There are several usability issues in the software

#26. What can a risk-based approach to testing help identify?

a. Levels of system access to provide to testers
b. Appropriate testing techniques to use on the system
c. Role of the test lead for the project
d. Responsibility for failures that occur in production

#27. In an incident report, what is another attribute that can be used to indicate the priority of the incident?

a. Severity
b. Risk
c. Urgency
d. Impact

#28. Which of the following tools would be most appropriate for managing defects throughout the software lifecycle?

a. Configuration management tools
b. Requirements management tools
c. Failure management tools
d. Incident management tools

#1 When test cases are designed early in the lifecycle, verifying the test basis via the test design, which common test objective is being achieved?

a. Gaining confidence
b. Finding defects
c. Preventing defects
d. Providing information for decision making

#2 When following the fundamental test process, when should the test control activity take place?

a. During the planning activities
b. During the implementation and execution activities
c. During the monitoring activities
d. During all the activities

#3 Designing and prioritizing high level test cases occurs during which activity in the fundamental test process?

a. Test planning
b. Test analysis and design
c. Test implementation and execution
d. Evaluating exit criteria

#4 Which of the following is the lowest level of independence?

a. Tests are designed by the person who wrote the code
b. Tests are designed by a developer other than the one who wrote the code
c. Tests are designed by an independent test team
d. Tests are designed by an outsourced test team

#5 Which of the following is a correct statement?

a. A developer makes a mistake which causes a defect that may be seen as a failure during dynamic testing
b. A developer makes an error which results in a failure that may be seen as a fault when the software is executed
c. A developer has a failure which results in a defect that may be seen as a mistake during dynamic testing
d. A developer makes a mistake which causes a bug that may be seen as a defect when the software is executed

#6 Which of the following is an example of debugging?

a. A tester finds a defect and reports it
b. A tester retests a fix from the developer and finds a regression
c. A developer finds and fixes a defect
d. A developer performs unit testing

#7 Which of the following is a true statement about exhaustive testing?
a. It is a form of stress testing
b. It is not feasible except in the case of trivial software
c. It is commonly done with test automation
d. It is normally the responsibility of the developer during unit testing

#8 When should the testers start reviewing project documents?
a. When they have been baselined and approved
b. After the first revision
c. As soon as a draft is available
d. When the developers have started coding

#9 Which of the following is most correct regarding when functional tests may be executed?
a. Unit and integration
b. Integration and system
c. System and acceptance
d. All levels

#10 Which of the following is most correct regarding when non-functional tests may be executed?
a. Unit and integration
b. Integration and system
c. System and acceptance
d. All levels

#11 Which of the following is the correct list of the triggers for maintenance testing?
a. A component in production is modified, migrated or retired
b. A fix has been received for a product that is in development
c. A regression has been discovered in a set of fixes just received from the developer
d. A new requirement has been received for the software that is currently under test that may result in an architectural change

#12 In a V-model lifecycle, what should testers be doing when the design documents are available?
a. Preparing unit test code
b. Preparing functional and non-functional test cases
c. Reviewing the high-level requirements documents
d. Preparing system acceptance tests

#13 Usability testing is an example of which type of testing?
a. Functional
b. Non-functional
c. Structural
d. Change-related

#14 In a formal review, which role is normally responsible for documenting all the open issues?
a. The moderator
b. The author
c. The scribe
d. The manager

#15 Which of the following is a type of issue that is best found in static analysis?
a. An inaccurate formula
b. A memory leak
c. A piece of dead code
d. A problem with the code not matching the requirements

#16 Which testing technique would be most effective in determining and improving the maintainability of the code (assuming developers fix what is found)?
a. Peer reviews
b. Static analysis
c. Dynamic testing
d. Unit testing

#17 If test cases are derived from looking at the code, what type of test design technique is being used?
a. Black-box
b. White-box
c. Specification-based
d. Behavior-based

#18 Which document specifies the inputs and outputs for a test?
a. Test design specification
b. Test case specification
c. Test procedure specification
d. Test plan

#19 How does a test condition relate to a test case?

a. A test condition defines the test case
b. A test case tests a test condition
c. A test condition is the output from a test case
d. A test case creates test conditions

#20 Which of the following is a good reason to use experience-based testing?

a. You can find defects that might be missed by more formal techniques
b. You can test for defects that only experienced users would encounter
c. You can target the developer's efforts to the areas that users will be more likely to use
d. It is supported by strong tools and can be automated

#21 If you are using error guessing to target your testing, which type of testing are you doing?

a. Specification-based
b. Structure-based
c. Experience-based
d. Reference-based

#22 If you are testing a module of code, how do you determine the level of decision coverage you have achieved?

a. By taking the number of decisions you have tested and dividing that by the total number of executable statements in the module
b. By taking the number of decisions you have tested and dividing that by the total number of decisions in the module
c. By taking the number of decisions you have tested and dividing that by the total lines of code in the module
d. By taking the number of decision outcomes you have tested and dividing that by the total number of decision outcomes in the module

#23 You have been tasked with organizing a set of test cases into a test procedure that will indicate the order in which the test cases will be run. The order of execution is important because you are trying to test end-to-end transactions in this e-commerce book sales application, but you must also consider the priority of the test cases as some are more critical than others.

Given the test cases in this table, what would be the best order for execution to achieve both goals? (Note: 1 is the highest risk)

Test Case	Test Type	Risk Priority	Dependencies
1	Browse	2	None
2	Select	3	Browse
3	Select	2	Browse
4	Shopping Cart	1	Select
5	Shopping Cart	3	Select
6	Purchase	1	Shopping Cart
7	Refund	4	Purchase

a. 4, 6, 1, 3, 2, 5, 7
b. 1, 2, 5, 6, 7, 1, 3, 4, 6, 7
c. 1, 3, 4, 6, 1, 2, 5, 6, 7
d. 1, 3, 2, 4, 5, 6, 7

#24 You have been given the following conditions and results from those condition combinations. Given this information, using the decision table technique, what is the minimum number of test cases you would need to test these conditions?

Conditions:
Valid cash
Valid credit card
Valid debit card
Valid pin
Bank accepts
Valid Selection
Item in Stock
Results:
Reject Cash
Reject Card
Error Message
Return Cash
Refund Card
Sell Item

a. 7
b. 13
c. 15
d. 18

#25 You are testing a machine that scores exam papers and assigns grades. Based on the score achieved the grades are as follows: 1-49 = F, 50-59 = D-, 60-69 = D, 70-79 = C, 80-89 = B, 90-100=A

If you apply equivalence partitioning, how many test cases will you need to achieve minimum test coverage?

a. 6
b. 8
c. 10
d. 12

#26 You are testing a machine that scores exam papers and assigns grades. Based on the score achieved the grades are as follows: 1-49 = F, 50-59 = D-, 60-69 = D, 70-79 = C, 80-89 = B, 90-100=A

If you apply boundary value analysis, how many test cases will you need to achieve minimum test coverage?

a. 8
b. 10
c. 12
d. 14

#27 Consider the following high level program design and assume you can provide the values for today, A, B and C:

```
Start;
Do until B = C
   If today = Monday
      set A = 1
   elseif today = Wednesday
      Set A = 2
      Set B = C
   Endif;
   If B < C
     B = B + 1
   Endif;
Endloop;
End;
```

Which of the following sets of values will achieve 100% decision coverage with the least number of test cases (the order of the values is today, A, B, C)?

a. Monday, 1, 3, 3; Monday 3, 2, 4; Wednesday, 1, 2, 3; Tuesday, 5, 4, 3
b. Monday, 1, 2, 4; Wednesday 1, 2, 4
c. Monday, 5, 1, 1; Tuesday, 5, 1, 2; Wednesday, 5, 1, 2
d. Monday, 5, 3, 2; Monday, 5, 1, 1; Monday 5, 2, 3; Tuesday, 4, 4, 3; Wednesday, 1, 2, 3

#28 Given the following program fragment:

```
if day = Monday
    then statement a
else
    statement b
end if
if day = Tuesday
    then statement c
end if
```

What is the minimum number of test cases needed to achieve 100% statement coverage?

a. 1
b. 2
c. 3
d. 4

#29 Which of the following is a task that a test leader would be expected to do?

a. Write a test strategy
b. Set up a test environment
c. Prepare test data
d. Automate tests

#30 A metric that tracks the number of test cases executed is gathered during which activity in the test process?

a. Planning
b. Implementation
c. Execution
d. Reporting

#31 Which of the following is a true statement about test planning?

a. It should be done at the beginning of the project
b. It should be a continuous activity throughout the project
c. It should be started during design and finished before execution
d. It should be used as input for the test strategy

#32 If you are applying risk-based testing, which type of test approach are you using?

a. Analytical
b. Methodical
c. Regulatory
d. Model-based

#33 What is covered in the variances section of the Test Summary Report?

a. The variances between the weekly status reports and the final summary report
b. The variances between the defects found and the defects fixed
c. The variances between what was planned for testing and what was actually tested
d. The variances between the test cases executed and the total number of test cases

#34 Which of the following is a project risk?

a. A module that performs incorrect calculations due to a defect in a formula
b. A failed performance test
c. An issue with the interface between the system under test and a peripheral device
d. A problem with the development manager which is resulting in his rejecting all defect reports

#35 You have been given the following set of test cases to run. You have been instructed to run them in order by risk and to accomplish the testing as quickly as possible to provide feedback to the developers as soon as possible. Given this information, what is the best order in which to run these tests?

Test Case ID	Duration	Risk Priority	Dependency
1	30 mins	Low	6
2	10 mins	Medium	none
3	45 mins	High	1
4	30 mins	High	2
5	10 mins	Medium	4
6	15 mins	Low	2

a. 2, 4, 5, 6, 1, 3
b. 4, 3, 2, 5, 6, 1
c. 2, 5, 6, 4, 1, 3
d. 6, 1, 3, 2, 4, 5

#36 You have received the following description section in an incident report.

The report executed per the attached steps, but the data was incorrect. For example, the information in column 1 was wrong. See the attached screenshot. This report is critical to the users and they will be unable to do their jobs without this information.

What is the biggest problem with this incident report?

a. The developer won't know how important the problem is
b. The developer won't know how to repeat the test
c. The developer won't be able to see what the tester is saying is wrong
d. The developer doesn't know what the tester expected to see

#37 Which of the following is a true statement about test automation scripts that are captured using a capture/replay tool?
a. The scripts are easy to maintain
b. The scripts are data-driven
c. The scripts may be unstable
d. The scripts are created by experienced automators

#38 Which of the following is the purpose of a proof-of-concept for a new tool?
a. To verify that the licensing cost is affordable
b. To verify that the tool will work effectively within the current infrastructure
c. To verify that the vendor will provide adequate support
d. To verify that the return on investment will be sufficient

#39 Why is it important to define usage guidelines for a new tool?
a. Because this is a proven success factor in tool deployment
b. Because this will ensure the licensing restrictions are enforced
c. Because management needs to understand the details of the tool usage
d. Because this will provide the information needed for the cost/benefit analysis

#40 If a test tool is causing a probe effect, what does this mean?
a. The outcome of the test may be influenced by the use of the tool
b. The tool is used to continuously probe the software for defects
c. The tool is used primarily to assist with exploratory testing
d. The tester will require special training to be able to effectively use the tool

#1 Recall the activity that removes the cause of a failure.

a. Testing
b. Dynamic testing
c. Debugging
d. Reverse engineering

#2 What is the activity of comparing the planned test progress to the actual test progress?

a. Test control
b. Test planning
c. Test closure
d. Control cycling

#3 As a tester, which of the following is a key to effectively communicate and maintain positive relationships with developers when there is disagreement over the prioritization of a defect?

a. Escalate the issue to human resources and stress the importance of mutual respect
b. Communicate in a setting with senior management to ensure everyone understands
c. Convince the developer to accept the blame for the mistake
d. Remind them of the common goal of creating quality systems

#4 Which of the following is an important objective of the testing activities in the software development lifecycle?

a. Exhaustive testing
b. Providing decision-making information
c. Clustering defects
d. Debugging

#5 Why is software testing sometimes required for legal reasons?

a. It prevents developers from suing testers
b. Contracts may specify testing requirements that must be fulfilled
c. International laws require software testing for exported products
d. Testing across systems must be accompanied by legal documentation

#6 In what way does root cause analysis contribute to process improvement?

a. Helps to better identify and correct the root cause of defects
b. Outlines how development teams can code faster
c. Specifies the desired root causes to be achieved by other teams
d. Contributes to the justification of future project funding

#7 Why is it important to avoid the pesticide paradox?

a. Dynamic testing is less reliable in finding bugs
b. Pesticides mixed with static testing can allow bugs to escape detection
c. Tests should not be context dependent
d. Running the same tests over and over will reduce the chance of finding new defects

#8 Which of the following is a characteristic of a well-managed test level?
a. It has a target duration of one month
b. It has a corresponding test objective
c. It does not overlap with another test level
d. It applies a single test design technique

#9 Non-functional testing may be performed at which test level(s)?
a. Unit, integration, system and acceptance
b. Unit and integration
c. Load and performance
d. Unit, integration, and system

#10 When a system is targeted for decommissioning, what type of maintenance testing may be required?
a. Retirement testing
b. Regression testing
c. Data migration testing
d. Patch testing

#11 Which test activity should occur early in the software development lifecycle?
a. Test readiness review
b. Defect prioritization
c. Acceptance testing
d. Documentation reviews

#12 Which test activity is most appropriate when a minor modification has been applied to an existing system or program?
a. Apply patches to the system to ensure it is up to date
b. Perform a regression test to uncover defects that may be a result of the modification
c. Execute non-functional testing to ensure system reliability
d. Perform a backward-compatibility test with the old system as a contingency

#13 What is the purpose of performing regression testing when system maintenance activities have occurred?
a. To ensure the overall system has not regressed
b. To ensure no unauthorized changes have been applied to the system
c. To assess the scope of maintenance performed on the system
d. To identify any maintainability issues with the code

#14 Which of the following techniques is a form of static analysis?
a. Error guessing
b. Manual regression testing
c. Providing inputs and examining the resulting outputs
d. Manual examination of documentation

#15 What is the primary purpose of conducting static analysis?

a. To determine usability
b. To reduce scope expansion
c. To detect defects early
d. To eliminate reliance on compliers

#16 Which of the following is a benefit from static analysis?

a. Defects can be identified in documentation that might not be caught by dynamic testing
b. Early defect identification requires less documentation
c. Early execution of the code provides a gauge of code quality
d. Tools are not needed because reviews are used instead of executing code

#17 If your goal is to achieve 100% decision coverage, what testing technique are you using?

a. Behavior-based
b. Structure-based
c. Experience-based
d. Defect-based

#18 Which of the following test techniques uses the requirements specifications as the test basis?

a. Structure-based
b. Black-box
c. White-box
d. Exploratory

#19 Which of the following is an experience-based testing technique?

a. Error guessing
b. Intuition testing
c. Acceptance testing
d. Exhaustive testing

#20 Which of the following is considered a less formal test technique typically used in conjunction with other, more formal techniques?

a. Structure-based
b. Static analysis
c. Experience-based
d. Risk-based

#21 Which of the following is a correct statement?

a. A test condition tests a test procedure by following a test case
b. A test case tests a test condition by following a test procedure
c. A test procedure tests a test case by following a test condition
d. A test condition, a test case and a test procedure are all the same

#22 How is statement coverage determined?

a. Number of test decision points divided by the number of test cases
b. Number of decision outcomes tested divided by the total number of decision outcomes
c. Number of possible test case outcomes divided by the total number of function points
d. Number of executable statements tested divided by the total number of executable statements

#23 Which of the following is the correct decision table for the following pseudocode for ordering a hamburger? Note: if you add or delete items from the basic burger, you no longer get the basic burger.

```
Start
Select basic burger
If customer adds items
        While items to be added
                Ask customer which item
                Add item
        End while
Endif
If customer deletes items
        While items to be deleted
                Ask customer which item
                Delete item
        End while
Endif
If customer wants fries
        Add fries to order
Endif
Complete order
End
```

a.

Test #	1	2	3	4	5	6
Conditions						
Add items	Y	Y	N	N	N	N
Delete items	N	N	Y	Y	N	N
Add fries	Y	N	Y	N	Y	N
Results						
Basic burger	Y	Y	N	N	Y	Y
Burger – items	N	N	Y	Y	N	N
Added items	Y	Y	N	N	N	N
Fries	N	N	Y	N	Y	N

b.

Test #	1	2	3	4	5	6	7	8
Conditions								
Add items	Y	Y	Y	Y	N	N	N	N
Delete items	Y	Y	N	N	Y	Y	N	N
Add fries	Y	N	Y	N	Y	N	Y	N
Results								
Basic burger	N	N	N	N	N	N	Y	Y
Deleted items	Y	Y	N	N	Y	Y	N	N
Added items	Y	Y	Y	Y	N	N	N	N
Fries	Y	N	N	N	Y	N	Y	N

c.

Test #	1	2	3	4	5	6	7	8
Conditions								
Add items	Y	Y	Y	Y	N	N	N	N
Delete items	N	N	N	N	Y	Y	Y	Y
Add fries	Y	N	Y	N	Y	N	Y	N
Results								
Basic burger	Y	Y	Y	Y	N	N	N	N
Burger – items	N	N	N	N	Y	Y	Y	Y
Added items	Y	Y	Y	Y	N	N	N	N
Fries	Y	N	N	N	Y	N	Y	N

d.

Test #	1	2	3	4	5	6	7	8
Conditions								
Add items	Y	Y	Y	Y	N	N	N	N
Delete items	Y	Y	N	N	Y	Y	N	N
Add fries	Y	N	Y	N	Y	N	Y	N
Results								
Basic burger	Y	Y	Y	Y	N	N	Y	Y
Burger – items	N	N	N	N	Y	Y	N	N
Added items	Y	Y	Y	Y	N	N	N	N
Fries	Y	N	N	N	Y	N	Y	N

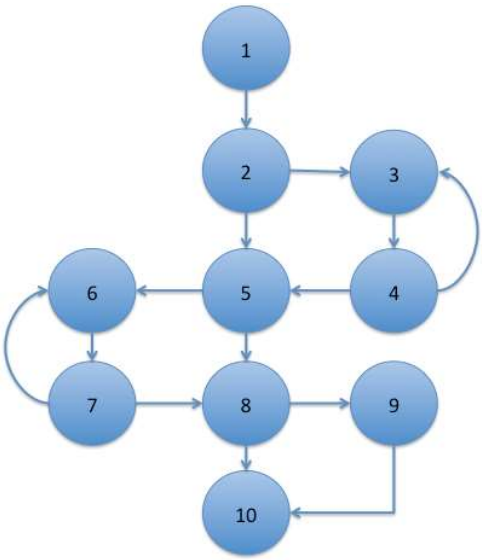
#24 You are testing a scale system that determines shipping rates for a regional web-based auto parts distributor. You want to group your test conditions to minimize the testing.

Identify how many equivalence classes are necessary for the following range. Weights are rounded to the nearest pound.

Weight	1 to 10 lbs.	11 to 25 lbs.	26 to 50 lbs.	51 lbs. and up
Shipping Cost	$5.00	$7.50	$12.00	$17.00

a. 8
b. 6
c. 5
d. 4

#25 Consider the following control flow chart:



You have run one test case:

1-2-3-4-5-6-7-8-9-10

What percentage of statement coverage have you achieved?

a. 50%
b. 80%
c. 90%
d. 100%

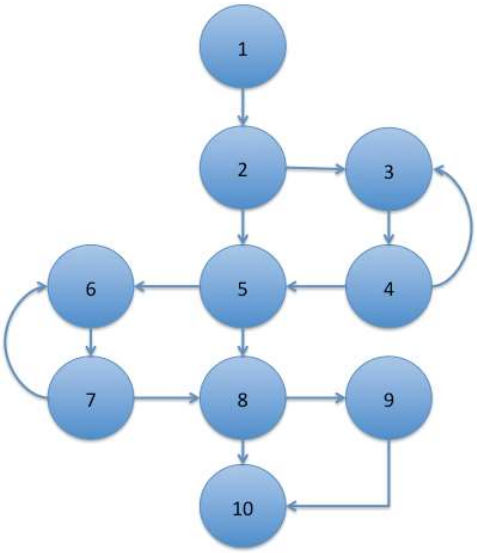
#26 You are testing a scale system that determines shipping rates for a regional web-based auto parts distributor. Due to regulations, shipments cannot exceed 100 lbs. You want to include boundary value analysis as part of your black-box test design.

How many tests will you need to execute to achieve 100% boundary value analysis?

Weight	0 to 10 lbs.	11 to 25 lbs.	26 to 50 lbs.	51 lbs. to 100
Shipping Cost	$5.00	$7.50	$12.00	$17.00

a. 4
b. 8
c. 10
d. 12

#27 Consider the following control flow chart:



You have run one test case:

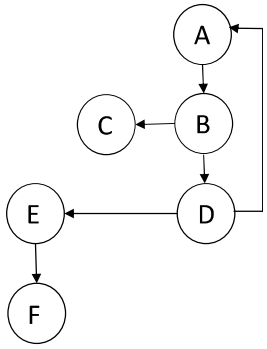
1-2-3-4-5-6-7-8-9-10

What percentage of decision coverage have you achieved?

a. 50%
b. 80%
c. 90%
d. 100%

#28 Evaluate the following control flow diagram and determine the statement coverage and decision coverage resulting from the execution of the following test cases:

A-B-D-E-F
A-B-C



a. 33% statement, 100% decision
b. 50% statement, 50% decision
c. 100% statement, 75% decision
d. 100% statement, 100% decision

#29 Level of risk is determined by which of the following?
a. Likelihood and impact
b. Priority and risk rating
c. Probability and practicality
d. Risk identification and mitigation

#30 Which of the following is a project risk?
a. A defect that is causing a performance issue
b. A duplicate requirement
c. An issue with a data conversion procedure
d. A schedule that requires work during Christmas shutdown

#31 What is the biggest problem with a developer testing his own code?
a. Developers are not good testers
b. Developers are not quality focused
c. Developers are not objective about their own code
d. Developers do not have time to test their own code

#32 Which of the following is a drawback with having independent testing done by independent testers?
a. The testers may be seen as bottlenecks in the release process
b. The developers will have to do most of the testing anyway
c. The testers will provide a quality-focused perspective
d. The developers will have to spend significant time training the testers

#33 Which of the IEEE 829 documents may refine the test approach?

a. The test plan
b. The test design specification
c. The test procedure specification
d. The test case specification

#34 What is the purpose of tracking defect density?

a. To determine the number of high priority defects
b. To determine the trend in high severity defects
c. To determine the areas that have the higher numbers of defects
d. To predict when the open defects found and the defects fixed numbers will converge

#35 Consider the following test cases that are used to test an accounting system:

Test ID	Name	Dependency	Priority
1	Purchase Item	none	2
2	Receive Invoice	Test 1	3
3	Receive Goods	Test 1	2
4	Send Payment	Test 2	3
5	Report Payments	Test 4	1

Given this information, what is the proper order in which to execute these test cases?

a. 5, 1, 3, 2, 4
b. 1, 2, 4, 3, 5
c. 1, 3, 2, 4, 5
d. 3, 4, 5, 1, 2

#36 You have been testing software that will be used to track credit card purchases. You have found a defect that causes the system to crash, but only if a person has made and voided 10 purchases in a row. What would be the proper priority and severity rating for this defect?

a. Priority high, severity high
b. Priority high, severity low
c. Priority low, severity low
d. Priority low, severity high

#37 What is the primary purpose of a test execution tool?

a. It executes test objects using automated test scripts
b. It automatically records defects to the defect tracking system
c. It analyzes code to determine if there are any coding standard violations
d. It tracks test cases, defects and requirements traceability

#38 Which of the following are the major objectives of a pilot project for a tool introduction?

a. Roll out, adapt, train, implement
b. Monitor, support, revise, implement
c. Learn, evaluate, decide, assess
d. Evaluate, adapt, monitor, support

#39 What is the main goal of a proof of concept for a new tool?

a. To see if people find it usable
b. To see if it works with the organization's infrastructure
c. To see if management is happy with the licensing structure
d. To see if the vendor will supply adequate support

#40 If you are looking for a tool that will verify if the code complies with coding standards, what type of tool are you seeking?

a. Test management
b. Test automation
c. Static analysis
d. Keyword-driven

UKTB CTFL Practice Examination
Version 1.2 December 2015

Your Guide to this Sample Paper:

This sample paper has been provided by the UK Testing Board to help students to prepare for the ISTQB® Certified Tester Foundation Level examination.

- This exam is provided in a multiple-choice format.
- Only one of the given answers is correct.
- The total number of credits is 40.
- In order to pass the live exam, at least 65% of the credits (26 credits) must be achieved.

Question One

Which of the following test case design techniques is white box (structure-based)?

A Use case testing
B State transition testing
C Decision testing
D Equivalence partitioning

Question Two

How does software testing contribute to the quality of delivered software?

A By detecting and removing all the defects in the delivered code and ensuring that all tests adhere to the quality standards set for the project
B By measuring reliability of the software and ensuring that it is always above 99.99%
C By identifying root causes of defects from past projects and using the lessons learned to improve processes and thus help to reduce the defect count
D By detecting all deviations from coding good practice and ensuring that these are corrected

Question Three

Which of the following BEST describes the relationship between test planning and test execution?

A Test planning sets the level of detail in test procedures for test execution
B Test planning schedules test execution but does not assign resources
C Test planning defines the overall approach to testing but does not schedule test execution
D Test planning assigns resources for test execution but does not schedule the test activities.

Question Four

Which of the following would typically be used as the test basis for Acceptance Testing?

a. System design
b. System configuration
c. Risk analysis reports
d. System requirements
e. Business use cases

A c, d, e
B a, b, d
C b, c, d
D a, b, e

Question Five

Which of the following is a valid objective of testing?

A Correcting defects
B Confirming target delivery dates
C Finding defects
D Ensuring no defects are present

Question Six

Test script "Transval 001" verifies transaction validation screen "TRN03". According to the specification (PID version 1.3, section 10.2) the validation screen should not accept future dated transactions.
Test script "EOD 004" verifies end of day processing, this script is scheduled to run after data has been entered via screen "TRN03".
During test execution, test script "Transval 001" has passed, but test script "EOD 004" has failed, as future dated transactions appear to have caused the end of day processing to fail.

An Incident report needs to be raised, which of the following is the BEST detail to include?

A **Title:** End of Day failure. **Reproducible:** Yes. **Description:** Script "EOD 004" fails when the first transaction of the day is future dated. Screen shot of the failure is attached
B **Title:** Transaction input screen validation. **Reproducible:** Yes. **Description:** End of Day process fails. Validation of transaction entry on screen TRN03 should not allow future dated transactions – see PID ver 1.3, section 10.2. Screen shot of the failure and evidence of a future dated transaction from the input screen is attached, together with a database query showing the future dated transaction
C **Title:** Screen TRN03 validation of transaction date. **Reproducible:** No. **Description:** When a future dated transaction is processed by the end of day process, a failure can occur. Three runs of the end of process passed today so this does not always happen. Screen shot of the failure is attached
D **Title:** Screen TRN03 validation of transaction date. **Reproducible:** Yes. **Description:** Script "EOD 004" failed as a transaction was future dated. Screen shot of the failure is attached and also the database query showing the transaction that is future dated. Validation of transaction entry on screen TRN03 should not allow future dated transactions – see PID ver 1.3, section 10.2

Question Seven

Which of the following would be appropriate objectives for Acceptance Testing?

a) Finding defects – both in software and manuals
b) Establish confidence in the system
c) Deal with incomplete / undocumented requirements
d) Ensuring that all related systems interact successfully
e) Assessing readiness for deployment and use

A a and c
B b and c
C a and b
D b and e

Question Eight

Which statement correctly describes debugging?

A Testers identify defects, developers locate and correct defects, testers confirm the correction has cleared the original defect
B Developers identify defects, testers locate defects, developers correct and confirm the correction has cleared the original defect
C Testers identify and locate defects, developers correct defects and confirm the correction has cleared the original defect
D Developers identify, locate and correct defects, testers confirm the correction has cleared the original defect

Question Nine

Which of the activities of the fundamental test process does the task 'verify the test environment set up is correct' relate to?

A Planning and control
B Analysis and design
C Implementation and execution
D Evaluating exit criteria and reporting

Question Ten

Which of the following characteristics is most likely to promote effective software testing?

A Independence from the development process
B A belief that programmers always make mistakes
C Knowledge of the number of defects typically found in a program
D Confidence that the next stage will find defects missed at this stage

Question Eleven

Which of the following would typically be identified using static analysis by tools?

A Incorrect error handling
B A potential infinite loop
C Memory leakage
D A variable being set to the wrong value

Question Twelve

Which of the following statements about software development models is most accurate?

A The 4 stage V model is always the best choice of software development model for any project
B The agile development model is usually most appropriate for short projects
C The choice of software development model depends on product and project characteristics
D The 2 stage V model is the most appropriate development model for simple products

Question Thirteen

When should testers be involved in reviewing a test specification for UAT?

A At the beginning of the project
B As soon as requirements have been approved
C As soon as the test specification for UAT has been drafted
D At any time before UAT begins

Question Fourteen

Which of the following is a common test metric that provides the BEST indicator of test progress?

A The number of testers used for test execution
B Planned test execution completion date
C Test failure rate of tests executed
D The number and severity of product risks

Question Fifteen

Which of the following accurately defines the integration testing test level?

A Test basis includes software and system design, test objects include interfaces, and tests concentrate on the interactions between different parts of a system
B Test basis includes component requirements, test objects include database modules, and tests concentrate on the behaviour of the system as a whole.
C Test basis includes business processes, test objects include system configuration and configuration data, and tests concentrate on establishing confidence in the system
D Test basis includes use cases, test objects include user procedures and tests concentrate on a high level model of system behaviour

Question Sixteen

Which of the following is a valid consideration, when deciding if static analysis tools are appropriate?

A Static analysis tools can be applied to new code but cannot be applied to existing code
B Static analysis tools are not recommended for enforcing coding standards in development teams
C Static analysis tools may generate large numbers of warning messages when applied to new code, even if the code meets coding standards
D Static analysis tools do not generate any warning messages when applied to existing code

Question Seventeen

Why is independent testing important?

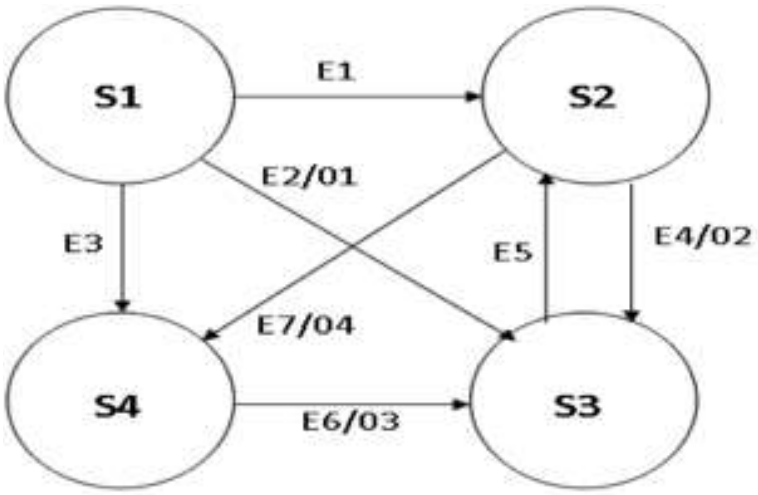
A Because independent testers make fewer assumptions than developers
B Because independent testers are less prone to making errors than the development team
C Because independent testers can verify assumptions made during specification and implementation of the system
D Because independent testers have a greater sense of responsibility for quality than developers

Question Eighteen

At which test level(s) can functional and structural tests be used together?

A At the component test level only
B At all test levels
C At integration testing and system testing levels only
D At all levels from integration testing to acceptance testing

Question Nineteen



A test case starts at S1 and triggers 4 events in sequence: E1, E4, E5, E7. What will be the finishing state and the action(s) from the test case?

A S2 and O4
B S2, O2 and O4
C S4, O2 and O4
D S4 and O2

Question Twenty

Which of the following statements **BEST** characterises maintenance testing?

A Maintenance testing is triggered by changes to delivered software and uses impact analysis to minimise the amount of regression testing needed
B Maintenance testing is triggered by changes to software under development before initial delivery and uses the test plan to determine how much regression testing to do
C Maintenance testing is triggered by changes to the test environment and uses testing tools to perform regression testing
D Maintenance testing is triggered by changes to the software environment and uses structural testing to ensure the changes function correctly

Question Twenty One

Under which of the following circumstances is maintenance testing required?

A Migration of software onto a new platform
B Testing during initial development of a replacement for an existing system
C Purchase of a new software tool
D Updating of a regression suite

Question Twenty Two

Which of the following BEST defines static techniques?

A Executing the software work product and analysing actual results
B Manually examining the code or software documentation without automated analysis
C Automated analysis of the code or software documentation without manual examination
D Manual examination and automated analysis of code or software documentation

Question Twenty Three

Which of the following is a role of a formal review

A Adjudicator
B Moderator
C Governor
D Corrector

Question Twenty Four

The Cambrian Pullman Express has special ticketing requirements represented by the decision table below.

Conditions	**Rule 1**	**Rule 2**	**Rule 3**	**Rule 4**	**Rule 5**	**Rule 6**	**Rule 7**
First class ticket	Y	N	N	N	Y	N	N
Std class flexible ticket	N	Y	N	N	N	Y	N
Std class day return	N	N	Y	N	N	N	N
Std class super saver	N	N	N	Y	N	N	Y
Railcard holder	N	N	N	N	Y	Y	Y
Actions							
OK to travel	Y	N	N	N	Y	N	N
Eligible for upgrade	N	Y	N	N	N	Y	N
Concessionary fare	N	N	N	N	Y	Y	N

Carol has a student railcard and is travelling on a Flexible Standard Class ticket. James has a senior railcard and is travelling on a super saver ticket. Which of the options represents the correct actions for these two test cases?

A Carol is not OK to travel, but is eligible to upgrade and eligible for a concessionary fare; James cannot use the service
B Carol is OK to travel and is eligible for a concessionary fare; James is eligible for an upgrade
C Carol and James are both eligible to travel and to upgrade
D Carol is OK to travel but not to upgrade; James cannot use the service

Question Twenty Five

Which from the following list are typically found to enable the review process to be successful?

a) Each review has clear predefined objectives
b) The lower the number of defects, the better the review process
c) The right people for the review objectives are involved
d) There is an emphasis on learning and process improvement
e) Management are not involved in the process at all
f) Checklists should not be used, as these slow down the process

A a, b and d
B b, c and f
C a, c and d
D d, e and f

Question Twenty Six

Before an invoice can be created, an account is required. Before an account can be set up, an account user is required (in order to set up the account). The software is delivered with a master user only, who can only create other types of users. The following test cases have been written to test the high-level structure of the software:

a) Create an invoice
b) Amend an invoice
c) Process an invoice (send to customer)
d) Delete an invoice
e) Create an account
f) Create an account user
g) Amend an account user
h) Delete an account user
i) Amend an account
j) Delete an account

Which of the following test procedures would enable all tests to be run?

A f, g, a, c, b, d, e, i, j, h
B e, i, a, c, b, d, f, g, h, j
C e, i, f, g, a, c, b, d, h, j
D f, g, e, i, a, b, c, d, j, h

Question Twenty Seven

From the following list, which of the following apply to experience-based techniques?

a) Test cases are derived from a model of the problem to be solved or the software
b) Test cases are derived from the knowledge of the testers
c) The knowledge of testers, developers or users is used to drive testing
d) The internal structure of the code is used to derive test cases

A a and b
B c and d
C a and d
D b and c

Question Twenty eight

Which of the following is a consideration when deploying test execution tools?

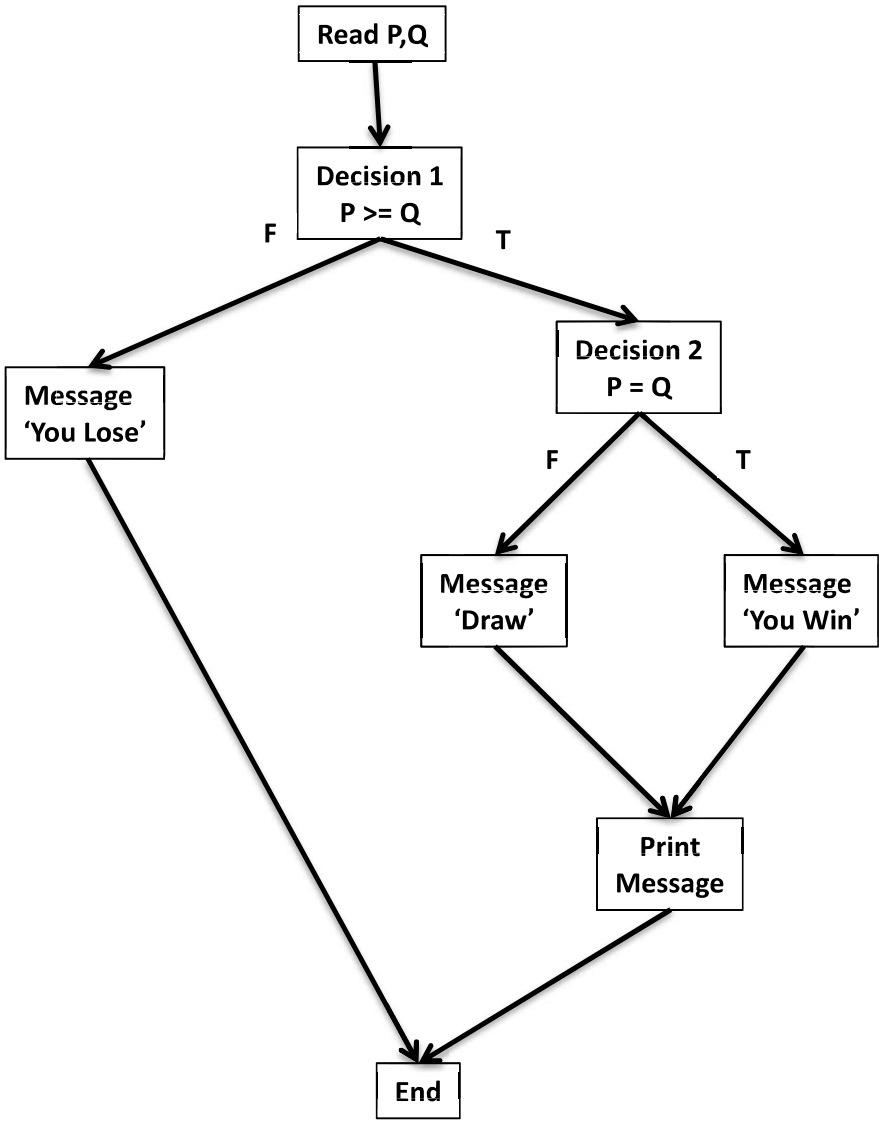
A Data-driven testing cannot be used with test execution tools
B Recorded manual tests may become unstable in use
C Keyword-driven testing cannot be used with test execution tools
D Expected results for tests are not required because the tool generates expected results

Question Twenty Nine

Which of the following factors will MOST affect the testing effort required to test a software product?

A The number of staff available to execute tests
B The level of detail in the test plan
C The requirements for reliability and security in the product
D The test estimation method used

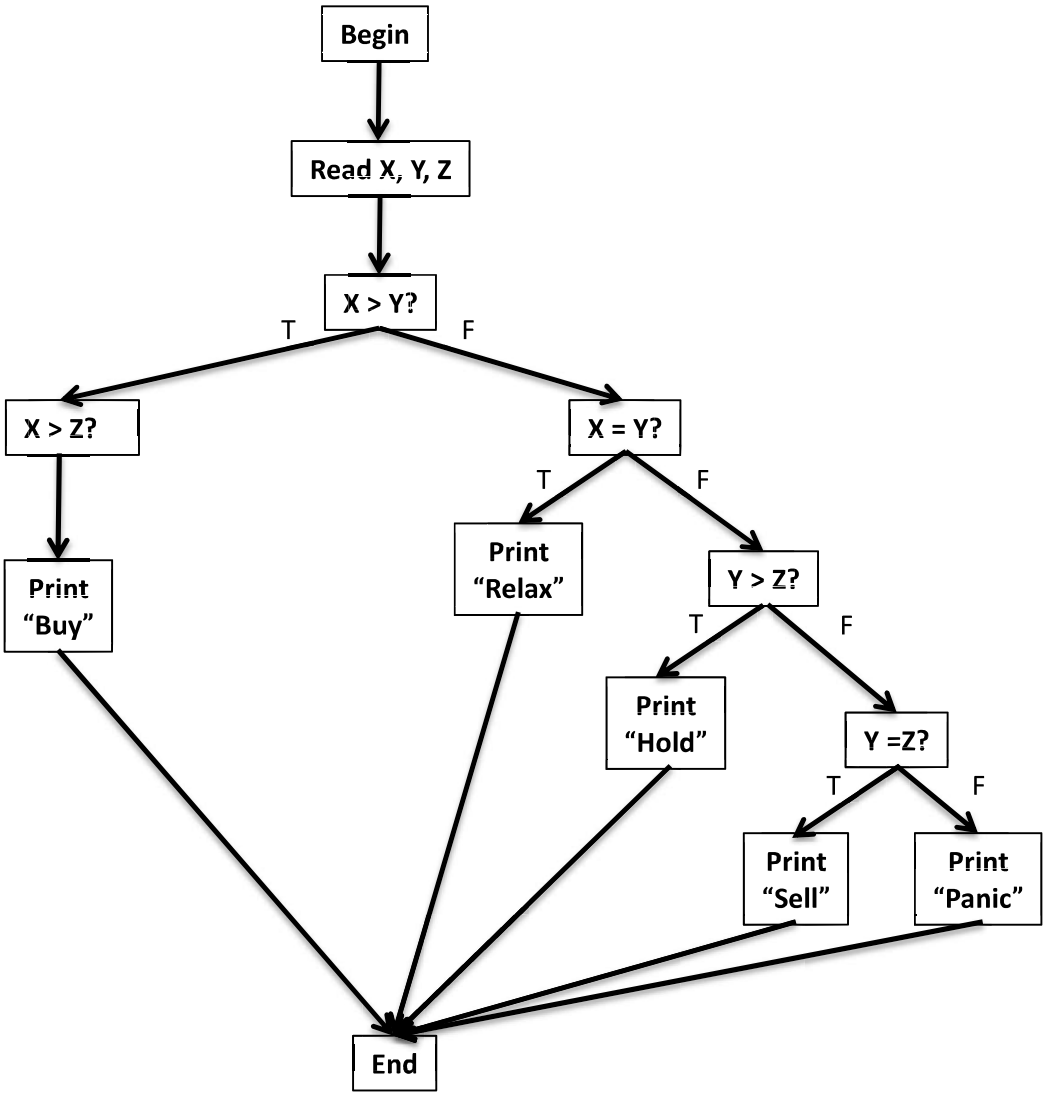
Question Thirty



Which pair of test cases below will exercise both outcomes from decision 2?

A P = 24, Q = 20; P=24, Q=25
B P = 36, Q = 36; P=37, Q=35
C P = 42, Q = 43; P=42, Q=42
D P = 37, Q = 36; P=35, Q=36

Question Thirty One

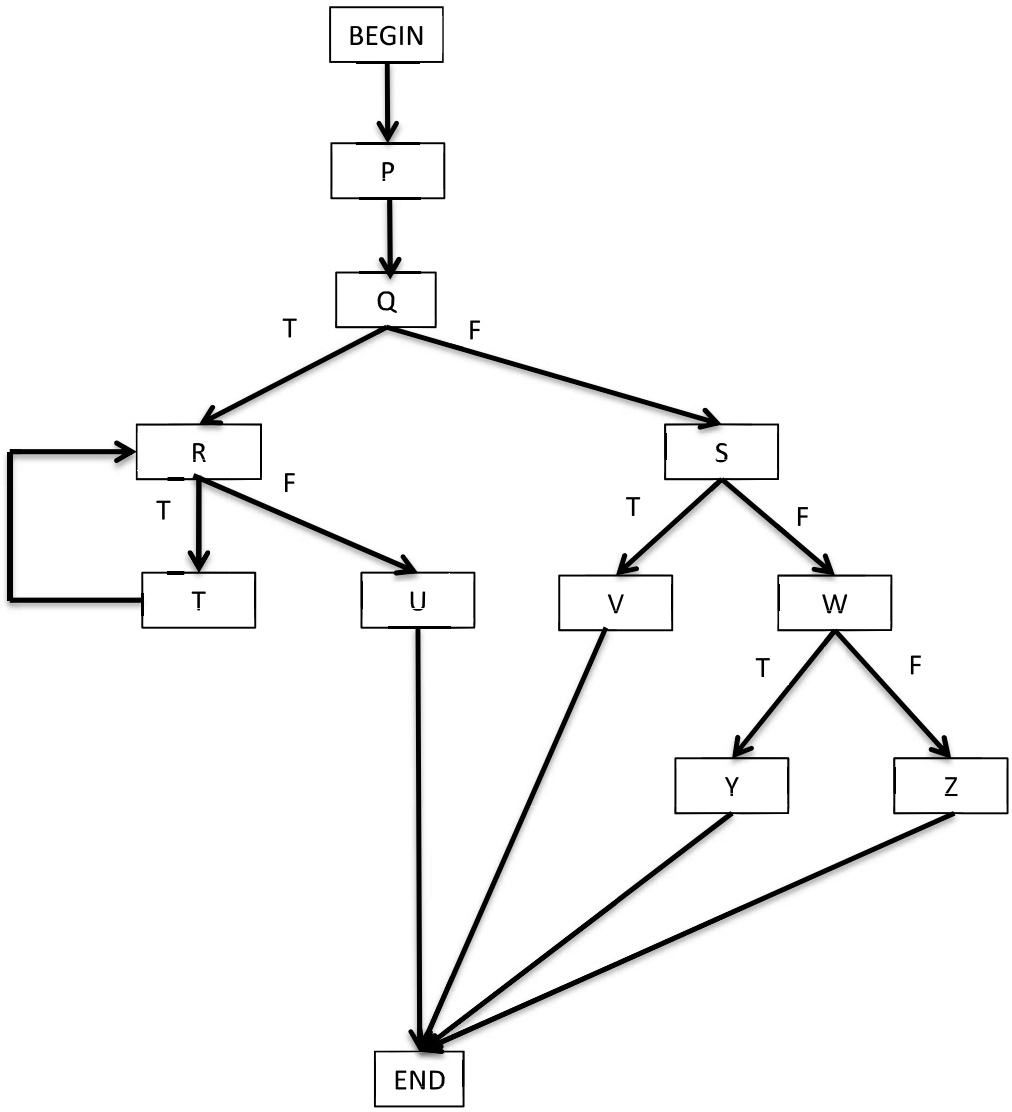


Which of the following test cases will ensure that the statement 'Print "Hold"' is exercised?

A X=2, Y=2, Z=2
B X=2, Y=3, Z=4
C X=2, Y=4, Z=3
D X=4, Y=3, Z=2

Question Thirty Two

The flow graph below shows the logic of a program for which 100% statement coverage and 100% decision coverage is required on exit from component testing.



The following test cases have been run:

Test Case 1 covering path P,Q,R,U
Test Case 2 covering path P,Q,S,V
Test Case 3 covering path P,Q,S,W,Z
Test case 4 covering path P,Q,S,W,Y

A Statement coverage is 100%; decision coverage is 100%
B Statement coverage is less than 100%; decision coverage is 100%
C Statement coverage is 100%; decision coverage is less than 100%
D Statement coverage and decision coverage are both less than 100%

Question Thirty Three

Which of the following is a valid reason for writing test cases based on experience and intuition?

A Use of formal techniques requires expensive training
B Only experience can ensure all functionality is covered
C Tests based on experience and intuition can supplement formal techniques
D Formal techniques require the use of expensive tools

Question Thirty Four

Which of the following test design techniques is classified as a structure-based (white box) technique?

A Exploratory testing
B Decision table testing
C State transition testing
D Statement testing

Question Thirty Five

Which statement BEST describes when test planning should be performed?

A Test planning is performed only once, at the beginning of the life cycle, and generates a Master Test Plan
B Test planning is performed at the beginning of the life cycle and again at the beginning of test execution
C Test planning is performed at the beginning of the testing phase and again at the beginning of every test level
D Test planning is performed continuously in all life cycle processes and activities

Question Thirty Six

#	Description	Priority	Note
a	Re-test defect no 52	Low	Re-test
b	Ability to amend transaction type	High	
c	Re-test defect no 26	High	Re-test
d	Run regression test script	Medium	Regression
e	Print monthly sales figures	Medium	
f	Add special invoice to previous month	Low	
g	Reprint selected previous sales figures	High	Must be run after item e
h	Account administrator able to amend any previous month's sales figures	Low	
i	Print year-to-date figures	Medium	

The following test cases need to be run, but time is limited, and it is possible that not all will be completed before the end of the test window

The first activity is to run any re-tests, followed by the regression test script. Users have supplied their priority order to tests.

Which of the following gives an appropriate test execution schedule, taking account of the prioritisation and other constraints?

A b, c, g, d, e, i, a, f, h
B a, c, d, b, g, e, i, f, h
C c, a, d, b, e, g, i, h, f
D d, c, a, e, b, g, i, f, h

Question Thirty Seven

Test objectives for the testing of a particular safety critical system include:

- completion of all outstanding defect correction.
- regression testing is required following defect correction at all test levels.

Which TWO of the following metrics would be MOST suitable for determining whether the test objective has been met?

a. Number of Regression tests run versus passed at all levels of testing
b. Number of Incidents closed at all levels of testing
c. Number of tests run versus passed in System test
d. Number of tests run versus passed at all levels of testing
e. Number of Incidents raised versus closed at all levels of testing

A a and e
B b and c
C d and e
D a and b

Question Thirty Eight

Which TWO of the following test tools would be classified as test execution tools?

a. Test data preparation tools
b. Test harness
c. Review tools
d. Test comparators
e. Configuration management tools

A a and b
B c and d
C c and e
D b and d

Question Thirty Nine

What is the main reason for using a pilot project to introduce a testing tool into an organization?

A To identify the requirements for using a tool
B To make a selection between alternative tools
C To assess whether the tool will be cost- effective
D To ensure the tools fits existing processes without change

Question Forty

An iPhone application identifies and counts all purchases of a particular product from a shopping website. The application as implemented incorrectly counts purchase attempts by including both failed attempts, and also those where the purchase was terminated by the user before completion. When the code was executed in testing it was found that the problem was located in the 'purchase identification' module, where the first stage in the purchasing process was counted, rather than a successful confirmed purchase.

Which of the following statements correctly identifies what has happened?

A The application failed because of a defect in the purchase identification module caused by a programmer mistake or an error in the specification

B An error by the programmer led to a mistake in the purchase identification module and this caused the application to fail

C A defect in the purchase identification module caused by a mistake in the module specification led to an error in the overall application

D A fault in the specification led to an error in the purchase identification module which caused a failure in the application